THE NORTHWEST

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- Incentive Versus Initiative
- Hardcore Unemployment—Rising National Problem
- West German Nazis In Action
- Hydrology—Yesterday and Tomorrow

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Technology Emerges World Wide

UNTIL very recent years, the more spectacular march of technology has been identified with the North American Continent. It was on this Continent that technology first made its broadest and deepest penetration into the physical and social affairs of man. But now technology is emerging world-wide.

A sweeping technological change is taking place in the Soviet Union which has put Russian production on par with U. S. production rates of the early 1940's, and is accompanied by a rate of growth in that area which is approximately five times that of present U. S. economic growth.

Mainland China is experiencing a broad area development program in which the largest construction program in the history of man is taking place. China now ranks number three in the world in total economic strength. Nearly all of this progress has occurred in the past twelve years.

But social change is not confined to the U. S., U. S. S. R., and China. At Tema, Ghana, an oil refinery of 2.2 million gallons annual capacity is being constructed. In Pakistan, at Chittagong, a steel mill with a capacity of 100,000 tons annually is under construction. In the Velebit Mountains near Senj, Yugoslavia, a 216,000-kilowatt hydroelectric plant and installation of 790 miles of transmission lines are being constructed. A 325-000-kilowatt steam-electric plant will be installed soon near Himeji, Japan. The foregoing illustrations are but indications of the movement for social change around the world.

Backward nations have come to the realization that in order to secure some of the good things of life they must industrialize and mechanize their economies. They want and require technical assistance to accomplish their goals; but they do not want any other nation's business practices or politics.

They have been witnesses to dramatic technological change over a short range of time without the chiseling practices of the Western business world. They want managerial competence to supply them with the food, clothing and shelter they require. They are impatient with, and reject, the 'go slow' counseling of American and international corporate enterprise in their social development.

As the result of the effects of technological change, political dogma, regardless of the name label, is becoming discredited as a force for social change. Technology is outflanking politics in every land area in which it has made a significant intrusion. A new concept for the conduct of social affairs is beginning to take form.

The North American Continent is undergoing an extension and refinement of the technological revolution which has been in progress since the early 1900's. It is in this land area that technology will first bring in a triumphal social change. Technocracy points out that then and only then will North America be able to show the way for the rest of the world.

— Editorial Board

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INDIA—A synthetic rubber plant with a capacity of 20,000 tons per year and a carbon plant with an annual capacity of 10,000 tons, will be constructed at Naharkatiya, India, in the hilly northeast Lakhimpur district of Assam. The region will provide natural gas which will be used to generate electricity for two plants and various other industrial undertakings projected within the next five years. It is estimated that the rubber plant will cost 150 m. rupees, and the carbon black unit will cost 10 m. rupees.

—Rubber Age

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COVER PICTURE

HOOVER DAM—highest in the United States at 726 feet—is an example of technological achievement by North American engineering and is a harbinger of much greater accomplishments yet to come in the development of this Continent's hydrology. In this issue on page 24 is a glimpse of Technocracy's Continental Hydrology.

—Photo by Union Pacific Railroad

JANUARY 1962

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INCENTIVE versus INITIATIVE

Initiative is a form of motivation which contrasts sharply with incentive. It is a form of personal expression arising from one's metabolism — an internal desire or compulsion to do something.

TECHNOCRACY has often been criticized on the grounds that it would not provide adequate incentives for people; that people would tend to abandon the desire to do their best work and to get ahead. Of course, such speculative philosophy is without merit. But, unwittingly, such critics pay Technocracy one of the finest compliments that could be extended to it. Considering what incentive has done to people in the past and the things it has sponsored, it is a plague on human society. If Technocracy can abolish incentive, then, for that reason alone, Technocracy should be recommended highly as the next social state for the North American Continent.

The exploitation of petroleum is one example of human motivations at work. On the one side are the oil merchants; these are motivated by *incentive.* On the other side are the automobile users; they are (in part) motivated by *initiative.* These two forms of motivation account for the bulk of human activity. No effective social strategy would fail to take them into consideration.

Although petroleum is about the most vital resource there is to the people of this modern world, there is little evident effort being made to conserve it or prolong its period of usefulness. Rather, the oil merchants gloat over the statistics on the population explosion. They are content to believe that more people mean more automobiles, and more automobiles will burn more petroleum products; hence, there will be more profits for the oil merchants.

The rabid merchandising, and the avid consumption, of petroleum products are obviously antisocial; for, in the long term, the age of petroleum is ephemeral. The supply of oil is finite. It is a heritage that should be used wisely. It has been only a century since the oil industry began major operations on this Continent. At the present rate of consumption (not allowing for any acceleration), it will not run for another century. The American Dream Boat runs on energy fuel that is being subtracted from the geological storehouse of the world. And once this storehouse is emptied, it cannot be refilled by any methods known to nature or to man in a million years.

The timber resources of the Continent are being depleted at a much faster rate than they are being renewed. Yet, the merchants of timber products are seeking ways and means of encouraging people to consume more timber products. The forests are being lavishly squandered for newsprint, for wooden crates that are used only once, and for flimsy construction. In the process, great quantities of forest materials are being burned heedlessly. Almost every sawmill has its sawdust and scrap burner, destroying organic materials and creating a local smog. Incentive is at work. That part which can be turned into cash by the quickest and easiest route is exploited to the full; that which requires planning and ingenuity, even though it might in the end yield a fair profit, is often by-passed.

In northwestern California, one can see an extensive mountainside (one among many) which has recently been deforested of giant Redwoods, leaving only an expanse of huge stumps. A newly constructed sign on the site reads: 'Harvested in 1960; replanted in 1961.' Such a sight is more likely to fill one with a hollow sense of futility than with confidence in the future. If all goes well, the next 'harvest' should be sometime around the Year 2500.

Incentive is a desire or craze for personal gain, stimulated by something outside of one's own me-

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tabolism. The means of that gain are secondary to the fact. Incentive will stimulate people to commit all forms of crime against their fellowmen, against their country, and against humanity at large — anything for personal gain. We have heard certain persons lament regretfully that World War II did not last another year; in which case, their fortunes would have been made.

At present, we are experiencing a boom-type promotion for the building and stocking of fallout shelters. There is slight concern, if any, among the promoters and merchants whether the shelters will be of any use after they are built. What will happen to the people in an emergency is scarcely relevant to the shelter program. The whole idea is to sell materials to the public and reap a quick and easy profit. Incentive is at work. Nor does it concern the promoters that the people who invest in shelters may have to deprive themselves of the essentials of living or go into debt in order to install them. Death, suffering, or the impoverization of others means nothing to the person motivated by incentive.

A natural role for the man of incentive is that of landlord. His character reaches a high degree of development if he can come into possession of a string of slum apartment houses and rent them to low-income tenants. Although he may roll in wealth and luxury himself, this landlord will appear to enjoy hounding his impoverished tenants for the rent, and he cares not at all that he helps blight their lives with excessive charges for crumby dwellings. He is motivated by incentive; and incentive has no compassion.

The manufacture and sale of automobiles is a classic example of incentive at work. Cars are made and sold for profit, and the more profit that can be made from them the better from the standpoint of those in the business. For only slightly more production cost than at present, an automobile could be made to last the lifetime of the driver, and then some. Such a car would not need major repairs due to parts failing or wearing out. It would not need frequent oil changes or grease jobs. It would be economical of fuel. In service, it would be far safer, more convenient, and much more indestructible than the glorified car of today. But such a car will not be built by the automobile industry under the Price System. It would not waste fuel and other materials, and it would not need early replacement. Only once in a lifetime would the manufacturer be able to make a profit off the owner of a car. Such a situation is contrary to all the principles of incentive — not only the incentive of the manufacturers, but also that of the petroleum merchants, the repairmen, the car wreckers, the service station operators, and the car-financing institutions.

Stimulus of Incentive

Incentive will stimulate people to promote and operate all kinds of rackets. A racket is an enterprise designed to get much more out of the economic system than is put into it by its promoters. They, rackets, are designed to gyp other people. Among the rackets are various gambling games which are rigged in favor of the operator. These are fixed to pay back only a percentage of what is

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taken in; so, the operator is sure to win. However, it is an ideal racket; for, the players are also motivated by incentive. They feel that, with a little luck or a trick 'system,' they can win. Once in a while a player does win more than he puts in, and that keeps him and other players coming back. Many family budgets suffer as a consequence of petty gambling.

The so-called protection rackets of the criminal elements and the steady shakedowns by public officials are an intrenched part of the social setup of most large cities. The petty thieving of the police and official inspectors is as nothing compared to the sub rosa graft that goes on in the higher echelons of social administration.

Dope pushing is an incentive operation, one of the most vicious of the lot. The dope racket could be abolished overnight, but the payoffs are so lucrative that no large city administration would be interested in its abolition.

Politics and Incentive

Politics is a very attractive field of operations for those strongly motivated by incentive. The citizen is naive, indeed, if he thinks that politicians seek office merely for the sake of the salaries involved and the privilege of serving the common good. Incentive opportunities come easy and frequently to one in political office; and few in that office completely ignore them. Even that most closely watched political office of all, the presidency of the United States, seldom is vacated, after a term of eight years, by less than a millionaire. In Latin America, the head of state is a piker in the incentive game if he cannot accumulate an estate of a hundred million dollars during his tenure in office. In politics, there is no place for a strictly honest man; that is, one who is motivated by a sense of duty to the society rather than by incentive for personal gain.

Under the Price System, one of the finest things you can say about another person is that he has 'lots of money.' If you can say that of him, it is not important that you say anything else; that one thing alone gives him status and the rank of a 'gentleman.' Seldom will one make serious inquiry as to how he came to have 'lots of money.' He may have inherited it from a pirate ancestor or (what amounts to the same thing) an early 'captain of industry.' He may have obtained it from some fancy financial manipulation, from lucky speculative gambling, from some chiseling enterprise, or from some racket. He may have gotten his start from informing on his fellowmen. One thing is certain, no one can earn great wealth through any meritorious effort or service of his own. But if you can say of someone 'he has lots of money,' or, what is still better, 'he is worth millions,' you will notice that other people will perk up and exhibit an attitude of admiration (or envy) toward that someone.

Most of the mischief in the world has been done by people motivated by incentive — by people who have gone out of their way to seek personal advantage and glory at the expense of others. Most warfare has been prompted by incentive of one kind or another, loot being a principal motive. Slavery was instigated and perpetuated by people seeking personal gain at the expense of others. All commercial enterprise, including the despoiling of resources, is the child of incentive.

On the other hand, most of the positive advances made by mankind have resulted from another kind of motivation, one that arises from an urge within the person — initiative. Initiative is a form of motivation which contrasts sharply with incentive. It is a form of personal expression arising from one's metabolism — an internal desire or compulsion to do something. We see it displayed where children are at play, engaging in games and activity which have no relationship to personal gain. The child enjoys being active and playing with other children. Children tend to be cooperative and, when the occasion arises, to help each other out of difficulties. Adults similarly display initiative in certain of their sports, such as boating, skiing, and motoring through the countryside.

A Natural Expression

Initiative is the primary type of human motivation. It is the natural expression of one's interest in things about him and of one's healthy vitality. Initiative is older and more basic than incentive in animal nature.

Unfortunately, children are indoctrinated with incentive at a very early age; and, as they grow older, this tends to dominate their interests. It may begin with the child's being paid for doing some little chore about the house which ordinarily would be considered a part of cooperative family living. The child soon gets the notion that it should be paid for everything it does to help out and gradually refuses to be cooperative with others on a selfless basis. The way has been opened for corruption to become a feature of the child's attitude toward life. When he grows up, he is looking for payola.

We do not intend to imply that all initiative is positive and desirable. Initiative can also be turned into negative and destructive channels, as in the case of the sadist or extreme egoist; or it may lead off into futile dead ends, as in the case of philosophy. Philosophy is mostly a product of initiative, but much philosophy has been negative and destructive in its effects; for example, the philosophy of the Master Race. The scholars and thinkers of many centuries have devoted themselves to philosophical musings; yet, very little of what they came up with has been worth preserving even as a matter of curiosity. Further, philosophers have done much mischief by using their talents to justify various economic malpractices arising from incentive . . . Now, we are plagued with the philosophy of *deterrents.*

Great Advances of History

The great advances in human history have come from science and technology. These advances arose out of the initiative of great geniuses, such as Archimedes, da Vinci, Galileo, Faraday, and Willard Gibbs, to name only a few, along with many lesser lights who happened to have the opportunity and will to pursue their interests to a conclusion and to avoid the degradation of incentive.

Many young people, perhaps as many as two or three percent of the population, have a strong natural interest in science — a desire to inquire into nature and learn the what, when, where, and how of things. They become fascinated with their observations and inquiry. This is an expression of initiative. At first, they are interested mainly in discovering and knowing. But soon they are reminded that they must also make a living in the Price System. So, either they must neglect their interest in science (possibly continuing to pursue it lightly only as a hobby) or they proceed to build some kind of a career around it. If the latter is the case, the young enthusiast may become a teacher of science, or he may enter into professional research work in something related to his special interest, or he may get a job in some industrial laboratory where he can carry on his pursuit of knowledge. Let us suppose that, somehow, his interest remains undiminished and that he is able freely to devote a considerable part of his time and effort to it. In rare instances, he may be able to evade the subtle intrusions of incentive into his life. However, the chances favor his being under various compulsions to 'get ahead'— to elevate his economic status. It may be that his employer offers him a promotion in rank and more pay provided he takes on some administrative work. He may be induced to think that he needs more money, so he takes the promotion. Soon the administrative work requires most of his time and attention; he lets his scientific research lag, and soon after that he is lost to science altogether.

During the expansion of the past twenty years, the need for capable administrators has exceeded the supply; so, promotions in rank along with raises in salaries have been available for most of the better qualified scientists. The incentives have been too much for them to resist, considering their conditioning in the Price System. Thus, a great many of the young scientists who entered the field of science as a matter of initiative have been led astray by incentive. They are now doing work that, in itself, means nothing to them, and which is foreign to their scientific training — but it pays them well and provides them with social status in the Price System. That they may be double-crossed later, probably just before retirement age, is another story.

A Corrupting Influence

Incentive is, beyond doubt, the most corrupting influence in any society. No equitable system of social operations can survive its intrusion. Many times, groups of people have set out to establish an equitable social order for themselves, only to have it disintegrate from within. One example was the United Orders of the Mormon Church in Utah under Brigham Young. In principle, each member of the Order was to contribute time and effort in whichever way he or she could best serve the community; and each was to receive an equal share of the fruits of the combined effort. However, in many of the Orders, the virus of incentive entered into the operational pattern: the administrators developed the idea that they were more deserving than the 'common' members, hence should have a larger share of the produce. No United Order survived for long after the inauguration of a differential income; it was soon corrupted and wrecked by incentive.

In 1917, the Bolshevik Party of Russia took over control of the government and instituted its own philosophy of social operations and management.

One of its guiding principles was that of economic equality. However, that principle was never translated into reality; there were always some who were 'more equal than others.' Now that principle is being abandoned. There has been a growing trend, lately, in the Soviet Union to offer incentive payments for certain kinds of service or for exceptional accomplishment. Also, incentive rewards are being offered to those groups who meet or exceed their quota. As a consequence, modern Russia is starting to develop a bourgeois complex. The early Bolsheviki did not have the courage or strategic sense to abolish the Price System and its incentives. It left numerous loopholes in the economic setup, through which success-minded individuals could find a way to get ahead. From where we sit, it looks as though the Soviet experiment is headed for trouble — internal trouble. That trouble is being spawned from incentive. The people of Russia are beginning to acquire the same bourgeois aspirations as the 'middle class' of the West. That is enough to ruin any society.

Technocrats are often confronted with the question, how will the people of the Technate be persuaded to work if there is no incentive and if all get equal income regardless of the duties they perform? This question, like many others that are asked of Technocrats, is based on certain assumptions which are invalid.

One assumption is that the individual is antagonistic toward doing anything useful unless he is enticed into it with certain inducements. Actually, the healthy individual is normally active and eager to join with others in doing something that needs doing. All they need is something that they feel needs doing and some guidance as to how to go about it. Many people readily volunteer for work in time of emergency, even under the Price System, although no pay is forthcoming. Remember how many people volunteered to watch the skies for 'enemy' planes a few years ago at the behest of Civil Defense? Only when they realized the uselessness and futility of such a boondoggle did they give it up . . . A significant phase of the educational process in the Technate will entail conditioning the people with an attitude of responsibility to the society as a whole, based on an inborn sense of duty.

Technocracy sees no virtue in jobs or employment as such. Technocracy would reduce human effort in the operation of the Continental society to a minimum. As efficiency improves and the operations become more automatic through applied technology, there will be less and less time required of the individual by the Technate. Certainly, tedious repetitive work will be eliminated. Hence, 'employment' in the Technate will not be a tiresome and boring ordeal as so much of it is in the Price System. Certainly, it will bear no resemblance to the slave labor that was commonplace in past generations. Since the hours of function in the Technate will be few, since function will be required only during the most vigorous period of one's life, and since the conditions under which one operates will be as pleasant as possible, it is very unlikely that 'goofing off' will be a problem in the Technate.

Another implication in the above question is that the individual will see nothing in it for himself, hence will become indifferent and discouraged. That is a concept that one would naturally acquire after a period of conditioning in the values of anarchic private enterprise where everyone has to look out for himself. In the Technate, however, all of the citizens, as individuals, will get the most for the least effort that has ever been the privilege of any population. Perhaps that can be thought of as a sort of incentive. Yet it will not operate as an incentive. In the Technate, one will not be able to get ahead at the expense of others. The only way to get ahead is for all citizens to move ahead together. That will come through initiative, not incentive.

It is high time that a social order were being established that would abolish incentive, or payola, and let positive, creative motivations take precedence in human affairs. Only Technocracy can qualify for that objective. Hence, Technocracy is a challenge to the initiative of all North Americans— an opportunity to get on with something that desperately needs doing. All that is needed is for one percent of the population to display more initiative than incentive in its approach to the social problem of this Continent. Here is your chance to be one in a hundred. Join Technocracy!

— Wilton Ivie

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Nigerian Foreign Minister Jaja Wachuku: I am losing confidence in the great powers. They are climbing from the pedestal of greatness to the pedestal of insanity. We expect leadership from them; they give us destruction. We expect wisdom from them; they give us lack of knowledge. We expect objectivity from them; they present us with blurred vision.

How do you expect us to follow such leadership?

Hard Core Unemployment ----
A Rising National Problem

(Editor's note—The following article from the New York Times, dated April 9, 1961, is being reprinted at this time because of its essential timeliness and analytical view of the chronic and growing U. S. unemployment problem.)

A jobless miner stood on a sere hillside near Scranton, staring down at the shell of an abandoned Pennsylvania colliery, 'I'm one of the lucky ones,' he said. 'I only have to wait twelve years till I get my Social Security.'

In Pittsburgh, a railroad brakeman, out of work for two years, scowled at a stockbroker's ad with the caption, 'Buy a Share in America.'

'I can't even buy a wheelbarrow,' he muttered. 'When is America going to buy a share in me?'

The sense of uselessness that afflicts these two long-time foot soldiers in the army of the unemployed points up a problem that has become President Kennedy's most acute domestic worry.

It is the fear that millions of workers will remain on the industrial slag heap after the nation's output of goods and services has shaken off its present slump and moved up to record heights.

Most of the President's economic advisers are convinced that the country will enter 1962 with no significant drop in the present level of 5,500,000 jobless workers. This view is widespread among officials who believe that the recession is near bottom and that business will start perking up in the next few months.

Their pessimism about any quick cut in the idle rate is a compound of concern over the hard core of unemployment that has become ingrained in many major areas and the under-use of productive facilities that has stemmed from the economy's failure to grow fast enough.

How deeply joblessness has settled in is reflected in the rising number on the idle rolls for fifteen weeks or more. The 1,862,000 workers in this category represent one-third of all the unemployed. Eight hundred thousand have been workless for more than a half-year.

The problem of keeping workers like these from becoming frozen into unwantedness is made harder by the pouring into the work force during the Sixties of millions of new workers, the vanguard of a generation born since World War II, eager to help build an expanding America. These youngsters will troop into the overfull labor market at a pace 40 percent faster than in the Fifties.

They will come at a time when new technology is revolutionizing work methods in offices, factories, farms, mines, transport and distribution. Automation and other far-reaching industrial changes promise a vast expansion in our ability to make more and better goods with fewer and fewer workers.

They hold out the paradoxical vista of a limitless enrichment in our potential for human well-being and of mass misery for men and women whose opportunity to share in the fruits of technological progress may be gobbled up by the same machines that produce the new wealth.

Technology Will Eliminate Politics

A Congressional subcommittee studying the manpower impact of automation got such an arresting picture recently of the future of electronic brains and mechanical muscles that its chairman, Representative Elmer J. Holland, Democrat of Pennsylvania, told the industrial engineer who presented the testimony:

'These computers scare you. They will do away with Congress.'

The engineer discreetly forbore to say whether he felt this should be catalogued under the head of benefits or of burdens to be derived from automation.

Long-term joblessness has put America's two most famous production centers, Detroit and Pittsburgh, on the chronic distress list alongside the ghost towns left in the wake of the flight of major textile mills from New England to the South many years ago.

Not one of the country's 150 major industrial areas now has an unemployment rate of less than

3 percent, the dividing line the Labor Department uses to determine when job openings are in balance with job seekers.

Two-thirds of the areas are on the trouble list, with unemployment running above 6 percent. In thirty big cities one out of every eleven workers is tramping the streets looking for a job he cannot find. In thirteen centers the jobless toll is one out of eight or higher. For the country as a whole, the ratio — adjusted to discount the effect of purely seasonal ups and down in the job roster—is 6.9 percent, or roughly one in fifteen without work.

In terms of the Administration's pledge to 'put America back to work,' the gloomiest thing about these statistics is the memory that each slump since the end of the Korean conflict eight years ago has left the country with a bigger carryover of encrusted joblessness than it had before.

After each downturn in the business cycle, the period of recovery has been shorter and the swing toward re-employment weaker. This has meant more idle workers acting as a drag on the reviving economy and a quicker slip back into recession.

The upward thrust that reached its peak in July, 1953, lasted for forty-five months and brought the unemployment rate down to 2.7 percent. The slump of 1953-54 was followed by thirty-five months of improvement. This time the prosperity peak in July, 1957, was accompanied by a jobless rate of 4.2 percent.

The upswing after the 1957-58 recession continued only twenty-five months before it hit its crest last May. The unemployment rate stood at 5.1 percent and this was the jumping-off point for the present slide to a hard-times level of 6.9 percent.

Another Slump Coming

What worries the White House is the fear that a sluggish upturn now would not only leave the jobless total close to 7 percent but would also insure another slump late in 1963 or early in 1964.

This fear is not diminished by the fact that the number of workers with jobs keeps setting new records each month. Shortly before March employment established a high for the month of 65,516,000, the President stressed that record job figures would never satisfy him while the 'no-help-wanted' sign stayed up for millions in search of work.

The most optimistic members of the President's inner circle believe that it will be close to the end of next year before the country will approach the 4 percent jobless rate Mr. Kennedy has fixed as his target for a level of full employment attainable without inflation. Other high officials are doubtful that present programs are adequate to achieve the goal at all.

A Disquieting View

The most disquieting view of the dimensions of the problem comes from the Cabinet member in closest touch with it, Secretary of Labor Arthur J. Goldberg. He is convinced that the equivalent of 7,000,000 new full-time jobs would have to be created in the next twelve months to bring idleness down to a 'true level' in line with the Kennedy yardstick.

This estimate blends the total of those without any work, the 'deficit' in employment of those working part-time, the hordes of newcomers vying for jobs and the impact of technology. Huge as his figure is, Mr. Goldberg believes it understates the challenge. His own belief is that the Administration should not ease up until it cuts unemployment to 3 percent. This would bring the job need close to 8,000,000.

The confidential forecasts of the Labor Department analysis indicate a strong possibility that total unemployment in the early months of 1962 may top 6,000,000, the highest figure since the Great Depression. This would reflect a losing battle with the growth in the labor force, even if total national production went up by 4 percent this year. No Administration economists count on a bigger rise in output than that.

The uncertainty over how fast and how far we will move toward re-employment flows from profound changes in the geography, character and composition of the economy, coupled with the thrust of competition from a fast-industrializing world.

These are factors totally distinct from the normal seasonal fluctuations that often create confusion about whether unemployment is getting better or worse. Not the least of the current headaches in Washington is a suspicion that the country will conclude that all is well with the jobless now that their number has started the decline that is a traditional accompaniment of spring.

The hardest thing to understand about unemployment statistics is that the number of work-hunters can vary by as much as 1,900,000 from one part of the year to another with no basic improvement or deterioration in the job situation.

The explanation lies in the extent to which the seasons influence the flow of workers in or out of the labor market, regardless of whether the general business climate is bright or stormy.

Winter brings heavy lay-offs in the building trades and other outdoor jobs. The closing of schools in June means a big influx of youths looking for vacation work. Santa Claus always enrolls a substantial number of helpers in the pre-Christmas season and lets them out before New Year's.

To provide a true index of unemployment in constant terms, the Bureau of Labor Statistics has evolved a complex weighting system for the elimination of the distortions caused by such regular seasonal shifts.

How these work can be seen by studying what would happen if the seasonally adjusted unemployment rate stayed at the March level of 6.9 percent for a full year. With such a frozen jobless rate, the actual number of unemployed in each month would show these variations:

1961	
March	5,500,000
April	5,000,000
May	4,800,000
June	5,600,000
July	5,200,000
August	4,600,000
September	4,200,000
October	4,000,000
November	4,600,000
December	4,700,000
1962	
January	5,700,000
February	5,900,000

A further complication is the extent to which concealed unemployment is built into the statistics in a way that is bound to slow the recall of laid-off employees after output starts climbing.

The present employment total includes 1,745,000 workers on short time who normally work full-time. When business gets better, their employers are likely to lengthen their work week before recalling those dropped from the payroll.

In the hard-hit manufacturing industries, the average work week is running a full hour below the level of a year ago. This is the equivalent of 350,000 jobs that will be filled through more work by people now on the job, rather than by taking back the jobless.

An even more substantial factor in the ability of industrial activity to race ahead of re-employment is the sharp spurt in output per man-hour that invariably attends the first phases of a rising business cycle.

The resurgence of market demand allows businesses, made lean by the enforced austerity of the downturn, to begin cashing in on their squeeze-out of waste and the fuller utilization of their most efficient equipment. Productivity surges forward at double or triple the normal growth rate—and the idle wait to be rehired.

The long-term shrinkage of manpower needs in key sectors of industry is an outgrowth of the same basic trend toward producing more with less human toil. It is a trend that has had much more dramatic expression on the farm than in the factory.

In the last ten years our farms produced 28 percent more food and fiber with 28 percent fewer men, women and children at work. This is the climax of a half-century-old move toward machine planting and harvesting that has cut the number of farmers and farm hands from one-third of the national work force to one-tenth and still left us with such vast crops that we pay the farm owners not to grow them.

Newly developed picking machines indicate the probability of even more spectacular gains in farm productivity in the next few years. Many experts believe these machines will eventually end the exploitation of the country's most depressed labor group, the half-million migrant farm workers, whose annual earnings average less than $1,000 and who live in squalor reminiscent of 'Tobacco Road.'

The question is what will become of these workers when the machines 'emancipate' them from their bondage to the crops that pay them so poorly. Uneducated and unused to city life, how will they find jobs in industries that have long waiting lists of experienced workers they are unable to employ?

This is a much starker version of the worry that stalks tens of thousands of workers shaken out of jobs in the railroads, coal mines, steel mills, automobile and aircraft factories and many other branches of industry long before the slump started putting its clamp on work opportunities ten months ago.

Rail employment has gone down from 2,000,000 to 800,000 in the last four decades; the number of soft-coal miners has fallen from 700,000 to 200,000 in the same period. The bright side of these figures is that, without the increased efficiency they reflect, neither industry could have kept alive and there would have been no jobs for anyone.

But these triumphs over rival fuels and transportation systems are more comforting to those still employed than they are to the much larger number whose jobs have evaporated. Even the survivors are made anxious by the argument of rail management that featherbedding remains responsible for $600,000,000 a year in manpower waste. The railroad unions have asked the President and Congress to halt all proposed railroad mergers on the ground that those now contemplated would add 200,000 jobs to the 400,000 abolished in the last five years.

The awareness of such large-scale job dislocations in other industries has heightened apprehension among office and factory workers at the advent of technological marvels that make it possible to do so much more with so much less labor.

No amount of assurances by employers and Federal manpower experts that the end result of new technology will be an expansion of both jobs and living standards have erased this apprehension. It goes beyond the security of present employment to disquiet over whether work doors will be locked against millions of war babies nearing the job market.

Required — 13,500,000 Jobs!

Altogether the United States will need 13,500,000 more jobs in the Sixties merely to keep abreast of the expected growth in the labor force. This means an average of 25,000 new jobs each week, on top of those required to drain the reservoir of present unemployment and to replace jobs made superfluous by improved technology.

In the last year, despite the slackness of employment opportunities, 2,500,000 more people came into the job scramble than left it through death, age, sickness or voluntary withdrawal. This was more than double the 835,000 average annual growth in the working population in the last ten years.

By the end of this decade, 3,000,000 youngsters will be starting their quest for jobs each year, as against 2,000,000 now. This almost automatically guarantees trouble in getting the over-all unemployment rate down to 4 percent because the proportion of idleness among teen-age workers is always far higher than it is among their elders.

Present unemployment among boys between 14 and 19 in the job force is 18 percent, almost triple the figure for men between 35 and 44. In the 20-to-24 age bracket the rate is over 14 percent.

Statistics Dismaying

The most dismaying aspect of these high figures is that in a period of increased stress on skill and science the Labor Department expects that three out of ten of the 26,000,000 youngsters seeking work in the Sixties will have dropped out of high school without getting their diplomas. The unemployment rate for such dropouts runs close to 30 percent.

Among workers old enough to vote — and less disposed to hop from job to job when work is available—unemployment has hit hardest at the unskilled and semi-skilled in manufacturing, mining and transportation. One out of every five laborers is jobless, along with one out of every eight semi-skilled, mechanics and factory hands.

By contrast, only one out of fifty professional and technical workers is out of a job, one out of forty managers and executives and one out of twenty sales clerks and office workers. Much of this disparity between the plight of manual workers and those in the professional and clerical fields is, of course, attributable to the recession's concentrated impact on autos, steel and other hard-goods industries.

However, many analysts are convinced that a substantial part mirrors the long-term shift in the economy from production to service industries and from blue-collar to white-collar employment. In the last year blue-collar jobs for men dropped by 1,300,000 but white-collar jobs rose by 600,000. Among women the trend was even more startling, with office and service jobs up 700,000 while manual jobs stood almost even.

This highlights one of the most challenging social phases of the hard-core unemployment problem. The freeze-out of heavy jobs for men and the parallel expansion in lighter work openings for women is making the mother the breadwinner in many households while the father stays home with the kids.

In Masontown, Pa., near Pittsburgh, Mrs. Betty Milano tells a story that is a commonplace in many steel and coal towns. She has had to take a job in a shirt factory because her steelworker husband has been out of work for six months. Her third child is due in June.

Two-fifths of all the jobless—a total of 2,400,000 — are heads of families, now unable to earn enough to support their dependents. Forty percent of these have wives or children at work to help pay the family bills.

The trend toward more working women is no recession phenomenon. The Government expects 6,000,000 more women to be in the labor force in 1970 than there were last year. This will bring their number to 30,000,000 in a total force of 87,000,000. More important, it will mean a 25 percent rise in women workers while the number of men workers goes up only 15 percent.

Another troublesome social aspect of the squeeze on job opportunities for unskilled and semi-skilled manual workers is the knockout blow it delivers to the employment hopes of many Negro workers. They have tended to find their steadiest and most rewarding jobs in the kind of mine, factory and dock operations that lend themselves most readily to automation.

Despite the anti-discrimination laws that are supposed to immunize them against hiring bias, their current unemployment rate is more than double that of white workers. Handicapped by lack of education and the difficulty of breaking the bias barrier, many see little chance for acquiring the skills that might lead them into new endeavors.

The justification for this despondent view is to be found in the figures on long-term unemployment, which show an even more lopsided proportion of Negroes than the general ranks of the unemployed. Workers over 45 also tend to become glued into chronic joblessness in disproportionate numbers.

An especially disquieting aspect of this condition is the extent to which the list of workers idle fifteen weeks or longer has been climbing in good times as well as bad. In the prosperous period from 1951 through 1953, only about 250,000 workers were listed in this group. In the 1959-1960 period their total had grown to nearly 1,000,000. Now the recession has brought it close to 2,000,000.

Unwanted Workers

For many of these unwanted workers the reemployment problem has been made tougher by the interstate and, increasingly, international battle for industry that has caused a large-scale transfer of work from established production centers in the East and Midwest.

The efficiency gains permitted by automation have stirred new interest by many companies in availing themselves of offers to move into community-built plants and enjoy tax privileges not available in their old locations.

Much of the resistance to the President's plan for aiding distressed areas, which the House passed recently, stemmed from fear in the more industrialized states that the holding out of subsidies by the needy regions would prompt still more employers to move to places where they could get ultramodern plants free, plus lower labor bills and a reprieve from union-enforced curbs on management.

A study by Seymour L. Wolfbein, Deputy Assistant Secretary of Labor, demonstrated recently how the post-war industrial map had changed to create stagnation in some areas while work opportunities multiplied in others.

Florida and the seven Southwest states from California to Texas had an employment growth more than double the national average, while all eighteen Eastern and Midwest states lagged behind the average. New Jersey was one of the few that came close.

Now a global dimension has been added to the industrial tug-of-war. United States companies have been investing nearly $3,000,000,000 a year in foreign properties. Union leaders have complained that much of this investment amounts to an export of American jobs abroad, especially where a significant share of the foreign production is shipped back to this country for sale in the domestic market.

Add to this the jeopardizing of jobs in many sections by the regular flow of low-price imports from low-wage countries, the pooling of facilities through business consolidations and the intensified cost-consciousness induced by the recession and the step-up in competition at home and abroad.

The sum of all these factors has left the White House certain that the gross national product—the yardstick that measures our total output of goods and services—can go up by as much as $20,000,000,000 from its present annual rate of roughly $500,000,000,000 with little or no reduction in the size of the unemployment problem.

—New York Times

EDITORIAL COMMENT:

With greater application of automation it is becoming increasingly more difficult for the Price System to operate. Work occupies fewer hours in the lives of everyone; what work there is, grows less like work every year, and the less people work, the more their production grows. Public understanding must eventually overtake this transformation in the relationship of modern man to his physical environment. Fundamental changes in the social order, in man's relationship to man, are already in process.

Studies conducted years ago, when muscles were yielding a day's work to steam, showed that one man can put out about 48 KWH in useful work in a year. On that basis, the 750 billion KWH of electricity generated in the United States puts the equivalent of 85 workers at the disposal of each man, woman and child.

One man-hour of work today produces what it took three man-hours to produce sixty years ago. This means that we could be producing the same national product as in 1900 with one-third of the 1900 labor force. Today we find 12 million employed in distribution, 12 million employed in financial, clerical and service functions. In view of the tremendous duplication of effort in both fields, efficient re-organization could reduce this number to approximately one-half. Along with this group we have 5.5 million hired by the government—federal, state, county and city. Two million domestics, two million employed in teaching or self-employed, 2.5 million in the armed forces; these are certainly not employed in the production and distribution of goods. Added to this group are one million civilian employees of the Department of Defense, whose principal employment is that of housekeeping and procurement for those in uniform. Finally, we must add 2.5 million workers in industry engaged in filling the procurement orders.

Those who are classified as non-productive employees constituted only 30% of the labor force of 1900; today they make 60% or about 40 million. Added to this there are six million unemployed. Gross national product has reached an all-time high, this being accomplished with approximately 25 million productive workers—that is, those engaged in the extraction of raw materials and making of consumable goods from them.

One of the many props that the Price System had been depending upon, such as pensions, is being jeopardized by technological improvement and greater application of automation. As example, consider the railway workers' pension program. As the total number of employees declines, less and less money is being paid into the program. As more people become eligible, greater will become the deficit, ending in collapse, because of the inability of the program to support itself.

Today, in both business displacements and persons displacements, new alignments are emerging, not only world-wide but especially on our Continent.

The Price System has never cared to recognize the energy relationship between production capacity and the satisfying of the needs of all the people on a given land area, lest the entrepreneurs would thereby lose their squatter 'rights' in the domain of public welfare. Today, technology has become the Thermodynamic Medium for the production of goods and services and for their distribution. The social hobble is that technology cannot be made to become cooperative because it does not have a 'mind' to 'think' up either 'goodness' or corruption.

Technological equipment discriminates between the positive and negative electrical impulses. However, it is not capable of the same masterly intrigue of which human mental conditioning is capable. Hence, the Price System is being forced to admit the fact that social change is upon us, demanding its own kind of social control, activating with social purpose the physics and chemistry and biology involved in the operation of the new social mechanism ready for installation.

Political attempts to solve the problem of social change only aggravate and intensify the overall continuum, because political maneuvering requires the building up of ever more technological equipment, thereby constantly accelerating social change. It's later than you may realize.

—Fred Botts, 12247-3

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NEW AUTOMATION SYSTEM

WASHINGTON — The Strategic Air Command has unveiled a new automation system which will give the defense organization an exact picture every 24 hours of its manpower needs throughout the world.

The National Cash Register Co., which developed the system, said in an announcement that the equipment automatically will tell the number and type of men needed by SAC units in every part of the globe. It also will locate the most eligible and qualified men for assignments and give a daily projection of manpower needs six months in advance.

In less than two minutes the electronic system will consider more than 50 different facts about every individual and select the most eligible man for the job.

—Journal of Commerce, New York

WEST GERMAN NAZIS IN ACTION

THE AMERICAN people, who have been led to believe that West Germany has been purified of fascism, Nazi-style, may be surprised to learn that this vicious political movement is very much alive, thanks to the financial and political support of the U. S.

Since World War II, the U. S. has invested in excess of four billion dollars to rejuvenate the West German 'Kultur.'

The full political support of the U. S. has been thrown behind the Catholic Centrist Party of Konrad Adenauer, who is an example of German fascist statesmanship.

The recent 'border incidents' in Berlin were deliberately incited by the West German government and American propaganda, when it became evident that Russia intended to sign a treaty with East Germany. The signing of a treaty with East Germany would establish the necessity for recognition of the East German Government; and, obviously, this situation would require negotiation on an equal footing between East and West Germany if Germany were ever to be re-unified. Such a turn of events would likely break the power of the West German Catholic Centrist Party.

Adenauer is a hypocrite, which, of course, is a common characteristic of the politician. He wants, and has promised, to the German people a re-unified Germany. Yet, he knows that an election which included 18,000,000 Protestant East Germans would probably result in his defeat and the defeat of the Catholic Centrist Party. So he does not want to risk such an election.

Instead, Adenauer prefers to arm West Germany with the intent of forcing re-unification of Germany by making war on his own people, and on Russia while he's at it, with U. S. support.

To aid him in the Catholic Centrist Party objectives, Adenauer has enlisted a considerable amount of scum from the Nazi Party. The September 1961 issue of The Californian listed a few of the more well-known Nazis affiliated with the Sudeten - German Landsmannschaft (SL), West German political party:

'*Dr. Hans-Christoph Seebohm* — Speaker of the SL. He was responsible for "Aryanizing" property of the Jewish owners of the huge Czechoslovakian industrial complex, Britannia Colliery A. G. The word used for what happened to the Jews was "Ausschaltung" (elimination). During the war Seebohm cooperated closely as a mineral oil producer with Hermann Goering's Air Ministry.

'*Dr. Franz Boehm*—Federal chairman of SL. He was head of the NSDAP (Nazi) Gaugericht (District Court) in Sudetenland.

'*Dr. Victor Aschenbrenner* — SL's Federal Reporter on Cultural Affairs, Government counselor in the Hessian Ministry of Public Worship and Education. He was an official of the Nazi organization "Craft durch Fruede" (Strength through joy) while serving as head of the Sudeten-German section in the VDA (Union of the Germans Abroad).

'*Dr. Rudolf Staffen*—Federal Reporter on Enlightenment for SL. He was Konrad Henlein's delegate from the old SDP (the precursor of SL) to the Nazi organization "Sudeten German Frontline Fighters." He was also head of the Nazi District Office for War Victims in Sudetenland.

'*Franz Karmasin*—On SL's Federal Committee on Agriculture. He was chairman of the Carpatho German Party in Slovakia, Volksgruppenfuhrer (ethnic group leader) of the German minority in Slovakia, and Henlein's deputy. In short, he was a Nazi Official.

'*Dr. Hans Neuwirth*—On SL's Federal Committee on Personal and Law Affairs and Press and Information, and manager of the educational institute "Collegium-Carolinimum." He was executive member of the old SDP and was on the Nazi Reichstag in Berlin.

'*Leo Schubert*—SL's Federal Head on Affairs of Organization and State Head for North-Rhine-Westphalia. He was Nazi Kreisleiter of Ostrau, Nazi mayor of Glatz, and held Nazi membership card No. 87 showing him to be member of the Nazi Reichstag and SS Sturmbannfeuhrer.

'*Dr. Wilhelm Welwarsky* — Head and Federal Speaker of the Sudeten German Council on Gymnastics. He was the Nazi Deputy District leader on

Gymnastics in Sudetenland and a Storm Troopers leader.

'*Albert Smagon*—President of the Verband Heimatvertriebener Verleger e.V. (Union of Homeland Expellees Publishers, Inc.) and publisher of the journal "Ost-West-Kurier." He was counselor of the German Embassy in Slovakia under the Nazi satellite Tiso regime.

'*Konstantin Hoess* — Manager of the Union of Homeland Expellees Publishers, Inc. He was a Nazi Kreisleiter in Prague and a leader of the old Nazi SDP.

'*Frank Seiboth*—Co-owner of Wegweiser Publishing House, Federal Chairman of the BHE (All-German Party), member of the Sudeten German Council. He was a Nazi District Instructor.

'*Franz Hoeller*—Chief Editor of the publication Wegweiser fuer Heimatvertriebene (Guide for Homeland Expellees). He was commissioner of the Office on Cultural Affairs for the SDP, head of the Reich Propaganda Office in Sudetenland, and Nazi District Propaganda leader.

'*Ernst Frank*—Editor of Wegweiser fuer Heimatvertriebene, Editor of the Sudetendeutsche Turnerbriefe (Newsletter of Sudeten German Gymnasts). He was Nazi Kreishauptemtsleiter of Karlsbad. His brother, Karl Hermann Frank, was executed because of war crimes committed while Reich Protector of Bohemia and Moravia.

'*Dr. Rudolf Jahn*—Editor of "Blaetter der deutschen Gildenschaft" (Papers of the German Guilds), member of the leading circle of the Working Group of Sudeten German Gymnasts. He was an official in the Henlein office, Storm Troopers Standartenfuehrer and SS Obersturmbannfuehrer.

'*Dr. Fritz Koellner*—Senior Government Counselor in the Bavarian Ministry of Labor in Sudetenland in 1939. Nazi Deputy District Leader, member of the Reichstag, and Storm Troopers Brigadefuehrer. Hitler conferred the "Golden Nazi Party Badge of Honor" on him on Jan. 30, 1939.'

And in case you are wondering which American politicians are endorsing the resurgence of German fascism (a la Adenauer) here they are, according to The Californian: 'Senators Barry Goldwater, R-Ariz.; Herman Talmadge, D-Ga.; Karl Mundt, R-S.D.; Thomas Dodd, D-Conn.; Strom Thurmond, D-S.C.; Andrew Schoeppel, R-Kan.; Wallace Bennett, R-Utah; Thruston Morton, R-Ky.; also Congressmen Don Short, R-N.Dak.; Otto Passman, D-La.; W. R. Poage, D-Tex.; Joseph Addabbo, D-N.Y.; Philip Philbin, D-Mass.; James Davis, D-Ga.; Frank Becker, R-N.Y.; James Auchincloss, R-N.J.; John Rousselot, R-Calif.; James Utt, R-Calif.; Congressmen Morgan M. Moulder, D-Mo.; Gordon H. Scherer, R-Ohio; Henry C. Schadeberg, R-Wis.; and Roy A. Taylor, D-N.C. (who attended a "Sudeten German Day" celebration).'

The miserable, double-dealing, two-faced character of American Foreign Policy is beginning to come to light of day for more and more Americans. We are realizing that we, too, are being sold out by our national leadership to European fascism.

— 12247-1

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WESTINGHOUSE DEVELOPS SUPER-STRENGTH MAGNET

Development of the first super-strength magnet has been announced by Westinghouse Electric Corp. scientists. For its size, weight and energy consumption it is said to be the most powerful magnet ever built.

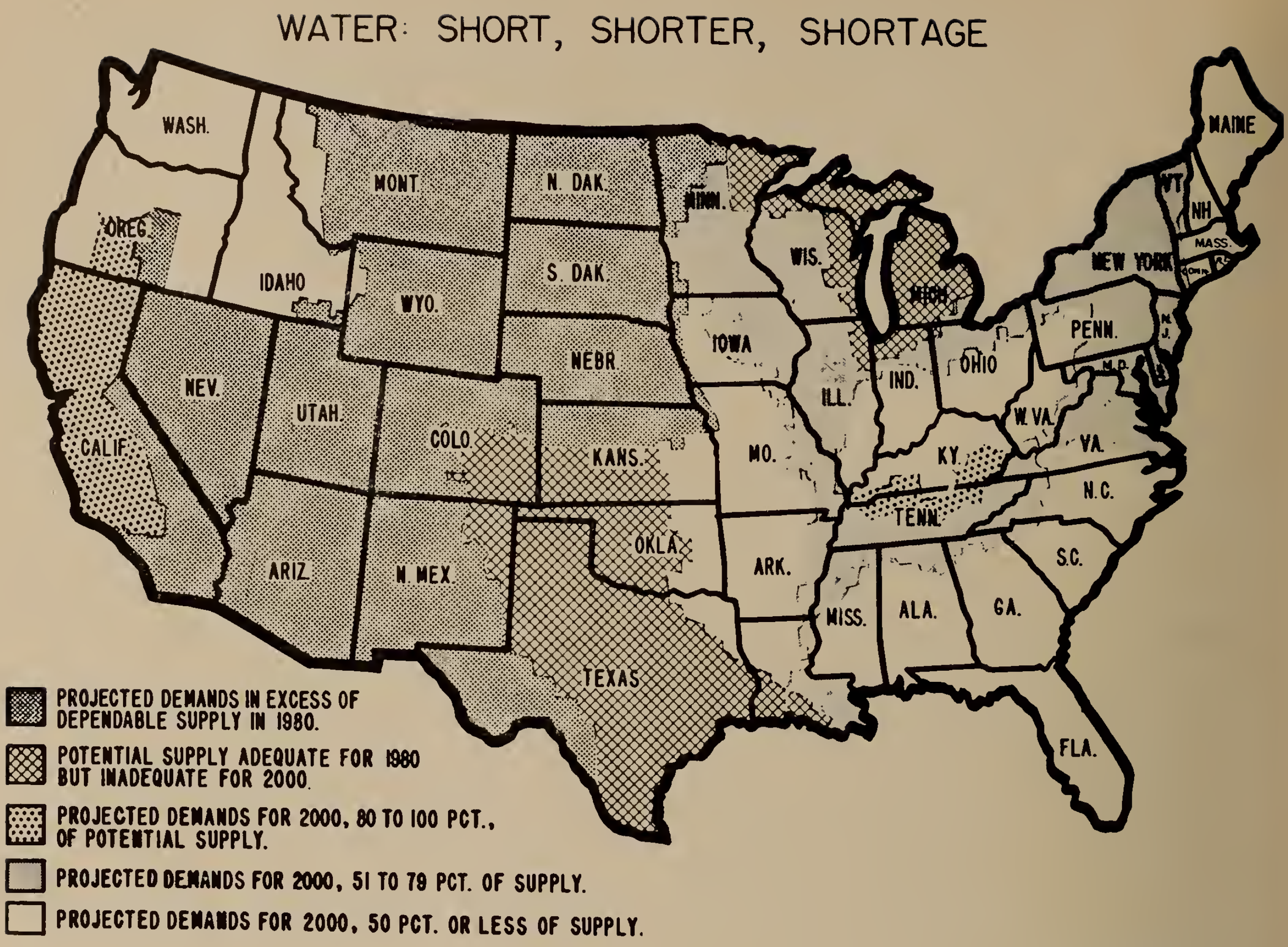
The Westinghouse super magnet, size of a doughnut and only a pound in weight, creates a magnetic field twice as strong as that from a conventional iron-core electro-magnet as large as an automobile, weighing 40,000 pounds and operated to saturation of the iron.

Such a conventional iron-core magnet needs its own power plant to continuously supply the 100,000 watts or more of power to run it.

In contrast, the new super magnet runs from an ordinary automobile storage battery. The only power the battery continuously supplies is a few watts to overcome the small losses in the wires leading to the magnet.

The superconducting magnet produces a magnetic strength, or flux density, of 43,000 gauss (43,000 lines per square centimeter). It has no iron-core. The new magnet is the first of what are certain to be super-strength magnets of the future.

—Western Machinery and Steel World


WATER: SHORT, SHORTER, SHORTAGE
WASH.
OREG.
CALIF.
IDAHO
NEV.
MONT.
WYO.
UTAH
ARIZ.
COLO.
N. MEX.
N. DAK.
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NEW YORK
MD.
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MAINE
VT
NH
MASS.
CONN.
PROJECTED DEMANDS IN EXCESS OF DEPENDABLE SUPPLY IN 1980.
POTENTIAL SUPPLY ADEQUATE FOR 1980 BUT INADEQUATE FOR 2000.
PROJECTED DEMANDS FOR 2000, 80 TO 100 PCT., OF POTENTIAL SUPPLY.
PROJECTED DEMANDS FOR 2000, 51 TO 79 PCT. OF SUPPLY.
PROJECTED DEMANDS FOR 2000, 50 PCT. OR LESS OF SUPPLY.

—Associated Press

Widespread Thirst Approaches In U.S.

Rich though it is in water resources, the United States is working itself up to a monumental thirst.

By 1980, scientists say, roughly a third of the nation will be short of water, and by the dawn of the 21st Century the shortage will have spread to more than half the country.

The Senate Select Committee on Water Resources, which has been studying the problem for the past two years under the leadership of Senator Kerr, Democrat, Oklahoma, has reported that the nation must plan on a huge scale to store water, to generate new water supplies, and to save water by keeping pure what we have. The committee puts a $12,000,000,000 tag on the new storage works necessary, and a $42,000,000,000 figure on the anti-pollution work.

Last month Congress passed a ‘pure water bill’ which President Kennedy promptly signed. It set up a $570,000,000 federal program to expand control of water pollution throughout the country. The plan provides matching funds for local water-treatment and sewage-disposal facilities.

The United States is a water-rich nation, says Dr. Z. Brown, a water expert at the Colorado College Conservation Foundation. But, contrary to popular belief, the nation’s water supply does have a limit and “there are no developments in sight which will substantially increase this amount."

Couple a finite water supply with a burgeoning population and a steady increase in the consumption of water, says Dr. Brown in the bulletin of the Population Reference Bureau, and you have the foundation of the water problem.

There will be between 232 and 274 million people in the United States by 1980, according to Census Bureau projections, and between 295 and 420 million by 2000.

Last year, the United States used 60 percent of its water supply, compared with only 8 percent in 1900. By 1975, experts estimate the country will be using 88 percent of its total supply.

By 2000, says Dr. Brown, 'the available supply and the demand might be perilously close.'

The total amount of fresh water available in the continental United States averages a little less than 1,100,000,000,000 gallons a day.

About 20 percent of the water used in the nation today comes from underground sources. In some sections — notably the Central and San Joaquin Valleys of California, South Central Arizona, the high plains of Northwestern Texas and Eastern New Mexico, and a small area of Eastern Arkansas —huge underground sources steadily are being depleted.

Dr. Brown says that of all the water now in use, industry and agriculture each use about 46 percent while 8 percent goes for municipal supplies. The biggest water hog of all is irrigation.

The primary user of underground water supplies, irrigation agriculture and the economy it supports will begin to disappear during the next few decades, Dr. Brown predicts.

While industry withdraws great quantities of water, it depletes only a small amount, says Dr. Brown. More than 85 percent of all industrial water is used for cooling and then discharged back into the stream.

'The significant change is in quality, not in quantity,' he says. The water is warmed which destroys many organisms. Because of this, natural purification processes fail to operate.

Industry, as well as municipalities, further complicates the pollution problem by dumping wastes into streams.

Dr. Brown calls pollution one of the nation's most serious problems 'and certainly one which will be most difficult to solve. Even if treatment can be achieved,' he says, 'the level of stream purification probably will not be adequate.'

Looking at suggested solutions, Dr. Brown is pessimistic.

Converting salt water from the ocean into fresh water is costly. The desalination plant at Freeport, Texas, the first in operation of five planned by the Department of Interior, purifies 1,000,000 gallons of water a day at a cost of $1 to $1.25 for each 1,000 gallons. Within five years, says Brown, this cost should drop to about 30 cents.

'Since this will require large amounts of cheap power,' he says, 'desalination may prove to be feasible only for large cities and industries.' He feels the cost of pumping the purified water inland from the coast will prove prohibitive.

Although much has been said about artificial weather control, Dr. Brown finds results so far inconclusive.

— Seattle Times

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Administration Needs a Success

The vigorous new administration has been long on words and short on deeds — successful deeds, that is. Cuba has been a defeat for it. Laos must be written off at this time as a virtual defeat. South Korea is an embarrassment; and so is South Vietnam. Africa has refused seduction. Latin America is cool to our wooing. The budget has been unbalanced, yet an economic recession persists at home. Our dictator stooges, those who still survive, are losing prestige around the world. Our allies are in a variety of delicate conditions: Britain is suffering an economic crisis; France is bogged down in a war it cannot win; West Germany is short on friends; and the rest are impotent or dubious. President Kennedy needs the spotlight of success to focus on his administration to secure its political advantage, but he has no positive program on which it can focus. So, he must play for a negative success; like, for instance, 'standing up to' Khrushchev.

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In the last 25 years, the steel industry in the United States has nearly doubled its producing capacity.

* * *

Japan now supplies 40 per cent of America's Christmas tree lamps. —The Seattle Times

CONTINENTAL TRENDS IN TECHNOLOGY

THROW-AWAY FABRICS

Throwing things away, some hospitals are finding, is actually a means of saving money. By using disposable drapes and towels in surgery and obstetrics, they cut down on laundering expenses and minimize the possibility of contamination.

This is but one of a string of uses for 'Kaycel' material, a nonwoven fabric that is sturdy and inexpensive. Kaycel is marketed by Kimberly-Stevens Corp., New York City, a jointly owned subsidiary of Kimberly-Clark Corp., Neenah, Wis. (paper), and J. P. Stevens & Co., New York City (textiles).

The material, which is described in the July-August issue of the Dupont Magazine, is made of a very open netting or 'scrim' of duPont nylon. This netting is then bonded between two layers of cellulose wadding to produce a soft fabric with seersuckerlike dimples. It can be used where strength must be equal to woven fabrics.

Kaycel can be easily dyed or printed, made fire retardant, and water repellent. It can be cut and sewn by standard textile methods. Prices range from 8 to 17 cents a yard.

Among the most popular items made with Kaycel are coats, aprons, and suits for industrial workers. Wearers include chemists, painters, and men who work with radioactive materials. 'Throwaway suits are cool, comfortable, and considerably less expensive than having clothing cleaned in a special "atomic laundry",' a nuclear equipment manufacturer reports. The Army Quartermaster Corps has run full field trials on such items as fatigue clothes, tents, sleeping bags, hospital gowns, pillowcases, and underclothing made of Kaycel.

The material also is adaptable to several types of coatings, such as latex and polyethylene, which suggest specialty packaging applications.

—Mechanical Handling

TOOL CONTROL BY TAPE FOR EXPORT

Electronic Systems that control machine tool operations are a specialized field in Canadian electronics industry.

Sperry Gyroscope Co. of Canada, Montreal, expects this year to export over $1 million worth of equipment.

Called the Sperry punched tape numerical control system. the equipment was recently fitted to an SIP jig borer. This company—the Swiss Societe Genevoise-D-Instrument de Physique — showed the teamed products at the New York exhibition of American Society of Tool and Manufacturing Engineers earlier this year.

The machine bores holes in metals with an accuracy within 80 millionths of an inch.

The Swiss Company has placed a stock order with Sperry for this equipment—it will be on the machine tool when it is sold all over the world.

Burgmaster Corp., Gardena, Calif., is currently installing an eight-spindle drilling, tapping and boring machine fitted with Sperry Gyroscope Co. of Canada tape control system at the Omaha, Nebraska, plant at Vickers, Inc.

Canadian Westinghouse Co., Hamilton, and Ferranti-Packard Electric, Toronto, are also in the punched tape machine tool control field.

—Financial Post

NEW HYDRO GRANT PROPOSED

Los Angeles Department of Water and Power has filed plans with the Federal Power Commission for a $1.1 billion hydroelectric project on the Colorado River. The Marble Canyon-Kanab Creek project will be north of the Grand Canyon National Park, about 200 miles upstream from Hoover Dam. It contemplates driving a record-breaking 43-mile tunnel from a small power plant at Marble Canyon to a 2-million-kw. capacity underground power plant at Kanab Creek. The plan suggests Federal sponsorship, with the contracting agencies at Arizona, California and Nevada repaying all costs of the government investment. Arizona would get about 2 billion kwhr., California and Nevada about 5.3 billion kwhr. annually. If acted on, the plan would displace an Arizona application for a Marble Canyon development, but not L.A.'s plan development at Bridge Canyon.

—Power

IRON PELLETIZING PLANT TO BE BUILT IN LABRADOR AT COST OF $60 MILLION

MONTREAL—Construction is to begin immediately on a $60 million iron ore pelletizing plant in Labrador, Joseph Smallwood, premier of Newfoundland, said. Completion is expected in the second quarter of 1963.

The plant will have an initial capacity of 5,500,000 tons of 65%-iron-content pellets annually. It will be owned by a new concern, Carol Pellet Co., whose shareholders are seven American iron and steel companies.

Iron Ore Co. of Canada will operate the plant and supply it with ore from an Iron Ore Co. concentrating plant that is expected to be completed early next year.

The concentrating plant will have an annual capacity of 7,000,000 tons, Iron Ore Co. said, and will produce ore for world markets in addition to supplying Carol Pellet Co.

Shareholders of Carol Pellet are National Steel Corp., Bethlehem Steel Corp., Republic Steel Corp., Armco Steel Corp., Wheeling Steel Corp., Youngstown Sheet & Tube Co. and M. A. Hanna Co. These companies, together with the Hollinger Consolidated Gold Mines, Ltd., group of companies, also own the stock of Iron Ore Co.

—Wall Street Journal

SALVADOR ADDS POWER

SAN SALVADOR—The Lempa River power station is now operating with its fourth turbine and generator, bringing capacity up to 60,000 kilowatts.

This was announced by the governmental agency in charge of the national electrification program. The agency also reported the completing of installations that will make it possible to put in a fifth power unit at a later date, when El Salvador's electric energy needs warrant it.

For the time being, the commission is depending on a new project near the Guatemalan border to increase available power. An American firm was recently awarded the contract to build a 15,000-kw. plant on the River Guajoyo, utilizing the waters of Lake Guija, part of which lies in Guatemala.

The Lempa River dam and station, built by the J. A. Jones Construction Co. of Charlotte, N. C., began operating in 1954 with 30,000 kilowatts initial capacity.

—New York Times

ROBOT PAINTS STORAGE TANKS

Engineers of the Esso Research and Engineering Co. have built a robot that looks like a small army tank. It will automatically prepare and paint any relatively smooth metal surface both vertically and horizontally.

A preliminary model has been built and successfully tested. Chief potential applications appear to be large metal storage tanks and ships' hulls and decks.

The front of the tank has a chipping tool that prepares the surface, a pressurized roller at the rear applies the paint. Magnets, set onto the treads, keep the painter stuck to the surfaces. Direction is decided by an operator using pneumatic controls.

The Esso engineers estimate that four such robots — about three feet long and one and one-half feet wide — could paint a medium sized tanker in 16 man-days, compared with 200 man-days manually.

The cost of painting such a ship by regular manual methods averages as high as $20,000 for protection that sometimes lasts only two months. If the robots can be perfected, the same job could be done for between $7500 and $14,000, and would last up to two years.

—Mechanical Handling

NEW FURNACE GETS HEAT BY ELECTRON BEAM ACTION

A big melting furnace which heats up metal raw materials by bombarding them with a beam of electrons has been brought into action by a West Coast metallurgical company. The furnace stands three stories high and can make ingots which are six feet long. It will produce specialty steels and refractory metals. The beams can also do welding.

—Steel Facts

NEW HYDRO PLANT WILL BE AUTOMATED

California-Oregon Power Company's new 18,000-kw. hydroelectric generating plant will be located on the Klamath River in California. Generator for the Iron Gate plant will be rated 18,947-kva. Iron Gate will be a completely self-contained automatic station controlled from an existing plant several miles away.

—Power

MEXICO PUSHING WORK ON BIG POWER, IRRIGATION PROJECT

MEXICO CITY—A hydro-electric project described as 'the most important in Latin America' is nearing the halfway point in construction. Total cost of the project will be about $80,000,000.

This French-financed irrigation and electric-power network will create the largest artificial lake in Mexico, approximately 39 miles long, in a canyon made by the Balsas River as it races through a mountainous area on the boundary of Michoacan and Guerrero States.

Completion date for the project, on which nearly 3,000 men are working, has been scheduled for June, 1964. At that time, work will have been going on continuously for more than five years.

Since the bulk of the financing came from the Bank of Industry of France, it was indicated that French equipment most likely will be used in the basic installations.

Such, for instance, will be the four principal turbines in the underground power plant that will have a capacity of 600,000 kilowatts.

The turbines will be activated by a 360-foot fall of water coursing through two big tunnels that channel the flow through the turbines.

Heart of the irrigation system will be the storage reservoir, which has dam walls that rise 560 feet in height.

The project, known as Infiernillo (Little Hell), is in what until two years ago was a remote mountain area, and which only a short time before that had been listed in maps as 'unexplored territory.'

The planning was done under direction of the Commission of the Tepalcatepec, headed by former president Lazaro Cardenas, which in 1959 opened the first road into the area in order to make preliminary studies. The site is about 68 miles from the city of Uruapan, in Michoacan State, and about 193 miles from Mexico City.

—United Press International

PHONE TO READ WATER METERS

NEW YORK—A New York company is negotiating with a utility to convert 20,000 water meters for remote reading.

A digital signaling device attached to customers' meters would be read by dialing the customers' telephone number, plus a code number.

—Seattle Times

LAKEVIEW TRANSFORMER

Canadian Westinghouse Co. recently shipped the second of two huge power transformers, the largest built in Canada, to the Ontario Hydro's Lakeview steam generating plant near Toronto.

The transformers will step up power generated at 15,200 volts to 230,000 volts for transmission to the Southern Ontario system.

Each has the capacity to supply the domestic power needs of the combined populations of Vancouver, Winnipeg, Ottawa and Halifax.

—Financial Post, Toronto

A GOOD USE FOR N.B.'s COAL

Construction is to commence soon of a new $10 million steam generating plant for the New Brunswick Electric Power Commission at Newcastle Creek. On completion it will use around 100,000 tons of local coal annually, and will boost the Province-owned utility's total capacity to 400,000 kw.

The long-term assurance of sufficient coal at competitive price with other fuels was an important factor in selecting a site in the New Brunswick coal belt for the 50,000 kw plant.

—Roads & Engineering Construction

American Electric Power reports that its 450,000-kw. Clinch River Plant in Virginia, over a full year's operation, has generated electricity below the heat rate level of 9,000 Btu. per kwh., probably the world's record.

—Power Engineering

IMPACT OF TECHNOLOGY ABROAD

More profoundly disturbing to the Old Order, more devastating to the age-old ideas of mankind than any political concept, past or present, is the march of technology around the world. Social change, induced by technology, population pressure and the simple desire of peoples for something better than they have now, is breaking down the Gates of the Old Order. Nothing, short of total annihilation, will stop social change either in North America or abroad.

INDONESIA STEPS UP ECONOMY — WITH RED HELP

Indonesia is taking energetic strides toward acquiring the equipment it needs to meet the goals of its eight-year plan. But the Iron Curtain countries are figuring heavily in the effort. Discussion of an economic and technical co-operation agreement with Rumania is in progress. Similar agreements with East Germany, West Germany, Poland, Czechoslovakia, and Hungary, have been signed, and missions have been dispatched to Yugoslavia and Austria to study and select machinery.

—Steel

A $4.5 million order for a turbine room equipment package to supply power for a Yugoslavian industrial complex has been awarded to the International General Electric Co. The order included a 130,000-kw. turbine-generator set, condenser, heaters, turbine-room piping and associated mechanical equipment in the power station, as well as switch gear, transformers and a substation.

—Power Engineering

AIRCO SUPPLIES THREE CHILEAN GAS PLANTS

Airco Co. International is supplying three industrial gas plants to Industria Chilean de Soldaduras, S. A. (Indura), of Santiago, Chile.

Two oxygen plants and an acetylene generating facility will go on stream later this year. They will increase the use of industrial gases in general metalworking in Chile. The oxygen plants will have a total capacity of 142 tons per month; the acetylene, 4800 cu. ft. per hour.

The plants will be located near the present Indura electrode manufacturing plant outside Santiago. In addition to oxygen and acetylene, the plants will produce nitrogen.

—Iron Age

MOSCOW — McGRAW-HILL WORLD NEWS

Konakov Thermoelectric Station in Moscow, which the Soviets claim will be the world's largest, will operate on natural gas. Highly automated plant will be assembled at the site from prefabricated reinforced-concrete columns and preassembled parts. It is slated for completion in early 1963.

—Power

WESTINGHOUSE TO BOOST SPANISH POWER SUPPLY

Westinghouse Electric International Co. announced that it will participate with two Spanish associates in supplying electrical apparatus which will add 262,500 kilowatts to the power capacity of southern Spain and Mallorca by 1966.

The order, placed by Institute Nacional de Industria, Madrid, is valued at approximately $11 million.

—Journal of Commerce

LUMBER

BRAZIL — Madeiras Compensadas da Amazonia (COMPENSA) has completed construction of a Cr. $180 million lumber mill in Manaus, capital of the Amazonas. Equipment was purchased in Czechoslovakia, and Czechoslovakia also supplied technicians to supervise assembly. Production of 4,000 cubic meters of lumber a month is expected, worth approximately Cr. $75 million. Once in full operation, the company intends to export up to U. S. $1 million worth of lumber a year.

—Foreign Trade, Ottawa

CLEARING BUILDS PRESSES FOR JAPANESE FIRM

'The world's first fully integrated automated production line for turning out automobile fenders' has been built by Clearing Division of U. S. Industries for a Japanese automotive manufacturer.

The equipment consists of six presses arranged in line to permit work to flow through the presses by means of automatic feeds. According to Clearing, the presses represent the largest single foreign order for American-built machinery on record in terms of dollar volume.

The line, which weighs a total of 700 tons, requires only two operators. Production capacity of the equipment is 1200 fenders per hour.

John R. Bartizal, Clearing president, said the line is one of four press lines Nissan Motor Co., Ltd., Tokyo, has ordered at a total cost of nearly $5 million.

—Metals Products Manufacturing

MACHINERY OUSTS LIGHTHOUSE MEN

ST. MARKS, Florida—Automation is about ready to take over the chores of the lighthouse-keepers here.

Machinery was installed a month ago which automatically turns on the light and Coast Guard lighthouse-keepers are being transferred to other duties.

—Associated Press

GERMANY IN PAKISTAN

West German industry, which has been increasingly active in the international scene, has contracted with the Pakistan Investment Promotion Bureau to contribute (1) $17.1 million toward construction of an acetate rayon yarn plant, and (2) $9.9 million for a polyethylene plant. The announcement, made by the Pakistan department, reported that the United States is also cooperating, with anticipated expenditures of $2.8 million for a tire factory and $4.7 million for a copper and aluminum cable factory being scheduled.

—Rubber Age

FLUORESCENT TUBES

GHANA—The Government of Ghana has contracted with the United Incandescent Lamp and Electrical Co., Ltd., of Hungary, to set up a complete electric lamp and fluorescent tube manufacturing factory in Ghana. Annual capacity will be three million gas-filled lamps (25-100 watt), one million auto and decoration lamps, and 100,000 fluorescent tubes.

—Foreign Trade, Ottawa

The government of Communist China has abolished the old-time ricksha on the ground that a man degrades himself by pulling another.

—Everett Daily Herald

GIGANTIC POWER POTENTIAL

Brazil's Mining and Power Minister has named a group to study construction of a hydroelectric project at Sete Quedas, one of the world's greatest waterfalls, on the Parana River between the Brazilian State of Parana and Paraguay. Total potential of the seven falls is estimated at 100 million kw. Sete Quedas is about 200 miles downstream from the 3-million-kw. Urubupunga project which six Brazilian states are undertaking with the help of international financing.

—Power, August, 1961

SOUTH AFRICAN IRON ORE

South African iron ore use is due to steadily increase in Japan. An official of Sumitoma Trading Co.'s Kumagai observed that the 750 tons per hour loading-capacity of the Port Elizabeth mechanical ore handling plant, slated to be in operation by 1963, will be more than enough to match requirements.

At present Japan has need of 20 million tons of iron ore each year. But in 1971 the estimate will have advanced to about 60 million tons. Japan has been importing iron ore mostly from Southern Asian nations, such as Malaya, the Philippines, China, Korea, Portuguese Goa and India, but supplies are held to be insufficient. Some two years ago Japan had to resort to sending out teams to investigate supplies available for export from such as Canada, Brazil, Chile and various parts of Africa.

—Journal of Commerce

MOSCOW, RUSSIA

Undergoing tests at an automobile plant is a magnetic pump for transportation of liquid cast iron, according to a U. S. Department of Commerce translation from the Russian publication Izvestia. The pump uses a traveling magnetic field to transfer molten metal directly from a melting furnace into molds. Method eliminated the need for conventional ladles and cranes.

—Automation

ROAD IMPROVEMENT

At the end of the second five-year plan, India had 160,000 trucks and 50,000 buses on the roads. There were about 144,000 miles of gravelled roads (only 2,350 miles were two-lane) and over 250,000 miles of dirt roads. The third five-year plan calls for a further 25,000 miles of gravelled. The need to extend and improve the road system is urgent since the rapid industrial program is already encountering difficulties because of inadequate rail transport.

—Foreign Trade

IRAQ DAM COMPLETED

BAGHDAD, Iraq—What officials call the biggest dam in the Middle East, the Darbandykhan Dam, northeast of Baghdad, has been completed after five years at an announced cost of $72,000,000.

—The Seattle Times

RUSS OPEN TV-TELEPHONE CIRCUIT

MOSCOW—The first 'see-as-you-talk' telephone link in the world was successfully tested between three Russian cities recently. It will go into regular operation, the Soviet news agency, Tass, said.

People at the 'video-telephonic' center here were able to talk with people in Leningrad and Kiev, and see them on television screens.

—The Seattle Times

ERICSSON GETS PHONE CONTRACT FROM LIBERIA

STOCKHOLM—L. M. Ericsson Telephone Co., parent company of the world-wide Ericsson telecommunications group, has announced receipt of a $1.6 million contract from the Government of Liberia for delivery and installation of automatic telephone exchange equipment, including cable network and subscriber apparatus.

The capital city of Monrovia and eight other Liberian communities will be equipped with telephone exchanges employing the Ericsson crossbar system. When complete, the installation will permit direct distance dialing between subscribers of the nine exchanges.

—Journal of Commerce, New York

381,000 RUSS LIBRARIES

MOSCOW—Tass says the number of libraries in the Soviet Union has increased by 30,000 in the past decade to 381,000.

—The Seattle Times

DEVELOPING SOCIAL PROBLEMS

MENTAL PATIENTS FILL HALF OF HOSPITAL BEDS

LONDON—Mental patients occupy half the beds in British hospitals, a mental health research fund reported. With a cure for the largest of all causes of 'severe mental disablement'—schizophrenia—'about one-third of the mental hospital beds could then be emptied over night,' the report said.

—Chicago Daily Tribune

BUSINESS FAILURES CLIMB

All the lively indicators don't help the near-record number of businesses that folded in August. The number, 1604, was close to the post-war peak. And liabilities, at $102.7 million, have been exceeded only twice in recent years.

—Iron Age

TODAY'S WORLD BEYOND TEACHING?

Columbia College has suspended its compulsory sophomore course in contemporary civilization.

A Faculty Committee Report noted regretfully that contemporary civilization has become too complex and complicated to be taught by the ordinary contemporary teacher.

—Christian Science Monitor

—What an admission this is! We recommend Technocracy's Study Course.

FORECLOSURES SHOW SHARP INCREASE

WASHINGTON—The Government reported a definite upswing in mortgage foreclosures on non-farm houses in the first three months of 1961.

The Federal Home Loan Bank board reported 16,891 foreclosures, up roughly 50 percent from the first quarter of 1960.

The 1960-61 recession, which reached its low point in February, was believed to be the major cause of the sharp increase.

In 1960, the board said the rate of foreclosure per 1,000 mortgaged homes rose to 2.65, compared to 2.34 in 1959. The 1960 rate was the highest in a decade.

—Journal of Commerce

PROGRESS ON THE FARM PROBLEM

The Administration's feed-grains program has proved a flop, to put it mildly.

The idea was to pay farmers to stop growing corn and sorghum. Announced as a scheme that would save the taxpayers $500 million, it has instead cost some $768 million—or almost twice what the old feed-grains subsidy cost. Huge surpluses have hardly been dented. Indeed, extra storage facilities for Government-owned grains are expected to add $300 million to the program's tab.

But the Administration's approach to the farm problem is not entirely unproductive. To encourage farmers to grow something else, the support price on soybeans was increased from $1.85 to $2.30 a bushel. And that has produced something quite new: A prospective 100 million bushel soybean surplus.

The Wall Street Journal

UNFIT FOOD TOTAL CALLED ENORMOUS

WASHINGTON—The Food and Drug Administration said it is removing from the market an average of more than 50,000 pounds of unsafe and unfit foods every working day of the year.

M. R. Stephens, FDA's enforcement chief, told the Association of Food and Drug Officials of the United States that an estimated 1,200 seizures of foods, drugs, cosmetics and devices will be made during the year ending June 30.

He based his figures on recorded totals for 12 months and estimates for the other three.

'Unsafe, decomposed and filthy foods seized have totaled many millions of pounds,' Stephens said.

Stephens said that while the statistics showed considerable had been done there is still much that needs to be done.

He cited the length of time between the discovery of a violation, the development of necessary evidence and the final judgment and stopping of an illegal practice.

As an example, Stephens said:

'We have finally obtained a permanent injunction against the Taylor Clinic at Dallas, Texas, the successors to the Hoxsey Clinic, dispensors of the worthless Hoxsey treatment for cancer. The initial injunction action was filed over ten years ago.'

—Seattle Post-Intelligencer

JUVENILES INCREASE IN INSTITUTIONS

OLYMPIA—The number of boys sent to Washington's juvenile correctional institutions increased by more than 60 percent between 1956 and 1961, the State Institutions Department said.

The department said that in 1956 there were 351 boys committed to correctional institutions. The number rose to 516 in fiscal 1958 and had reached a total of 331 during the first six months of 1961.

The juvenile court case total is expected to exceed 10,000 during 1961, the department reported.

Adult inmate population at the state's institutions had shown a long-term increase until January, 1960, but since then has declined from a high of 2,893 to 2,301.

During the period between January, 1960, and June, 1961, the number of adult admissions was 1,851, but 2,338 persons were released on parole.

—United Press International

COMMON MARKET

The decision of the British Government to consider joining the E.E.C. or Common Market, has been to New Zealand as a whole a bitter pill to swallow. There is still great uncertainty of what the outcome will be. The Prime Minister has even called it a disaster if New Zealand is to be deprived of its free market in Britain. The feelings of the people are that the British Government has practically made up its mind that it must join the European Common Market, and that Mr. Sandy's visit was to break the news gently to the Dominions and to give them a breathing space to look about for other markets.

There can be little doubt that the effect on New Zealand will be most marked. It relies almost entirely on the British Market to dispose of its surplus primary products. There is no other market, and no combination of markets that does not include Britain, to which New Zealand surplus produce can be sold.

—London Chamber of Commerce, Inc.

HYDROLOGY :

Yesterday and Tomorrow

MAN HAS grappled rivers since the dawn of history. One of Egypt's fabled pharaohs built a dam across the mighty Nile in the 19th Century B.C. Ancient Romans were busy dam-builders. The Pueblo Indians developed irrigation dams in the Southwest some 800 years ago.

But it was not until the 20th Century that dam-building achieved prominence as a challenge to the finest engineering skills, according to the pioneer dam-builders and engineers at Stone & Webster.

By making it economical to build dams in remote areas, electric power opened the way for such gigantic structures as the Grand Coulee, which contains over seven times as much masonry as the Great Pyramid of Cheops in Egypt, and the majestic Hoover Dam, at 726 feet, the highest in the United States.

Before electricity, dams were built for irrigation, flood control, water-storing reservoirs, and channels of navigation. In some ways, early dams rivaled modern counterparts as engineering marvels.

In Ceylon many centuries ago, a reservoir was formed by a man-made dike 11 miles long and 70 feet high, with total volume of 17 million cubic yards of earth. In ancient India, water was impounded behind a man-made barrier stretching 30 miles—and they did it without bulldozers!

Archaeologists have turned up evidence that early inhabitants of Chama River basin—in what is now New Mexico—built a fairly extensive network of small dams and canals to irrigate their fields.

Dams come in all shapes and sizes. Some are squat and long, others high and narrow. Some are arched, some straight, some Z-shaped. Key factors governing a dam's size and shape are location, purpose, and cost.

In early days, dams were usually made of earth, rock-fill, or crude masonry. Even today, earth dams are important. One of the biggest is Fort Peck dam on the Missouri River, with its 100 million cubic yards of earth.

California's Trinity dam, a 537-foot embankment, is one of the world's highest earth-fill dams, and work has started on Oroville dam, near Trinity, which will rise 735 feet to become the highest dam of any type in the United States and the biggest man-made earth project anywhere.

For the sightseer, high masonry dams like Hoover, the Shasta on California's Sacramento River, and the Bartlett on Arizona's Verde River are most spectacular. High dams originated in Spain three centuries ago. Later, French dam-builders pioneered the designs that whetted world-wide interest in the mammoth structures.

Dam-building in this country entered its modern era in 1902 when Congress passed the Reclamation Act, and such dams as the Roosevelt in Arizona and the Shoshone in Wyoming were built in the early 1900's.

But engineers rewrote their record books several times in the decades to follow, as dam-building passed important milestones.

In 1927, Stone & Webster engineers poured 700,000 cubic yards of concrete across the flood-swept Susquehanna River to shape the mile-long Conowingo dam and harness electricity for Philadelphia 70 miles away. At that time it was the largest power project ever built in one step.

*In 1936, the huge Hoover dam tamed the surging Colorado River. This colossus, on the Arizona-Nevada border, surpassed anything ever before attempted in man's unceasing quest to dominate his rivers. It was the highest, biggest, mightiest.

*In 1942, new records were set by the Grand Coulee on Washington's Columbia River. Containing 10,600,000 cubic yards of concrete, it was the world's largest masonry structure. Over its spillway could pass 1,000,000 cubic feet of water per second, or five times the normal flow at Niagara Falls.

In other lands, dam-building has picked up momentum since World War II. Italy has just completed the 870-foot Vaiont dam, highest in the world. India is finishing the 680-foot Bhakra dam. Switzerland is building the massive Grand Dixence dam in the Swiss Alps in the face of incredible obstacles—snow and threat of avalanche limit work to five months a year. When finished in 1966, Grand Dixence will be the world's loftiest at 922 feet.

But the Russians may grab that honor from the Swiss a few years later, for they have disclosed plans to build a 990-foot concrete dam on the Ingouri River near Volgograd.

Cream of the 1961 crop of U. S. dams is Rocky Reach, a $273 million hydroelectric project on the Columbia River near Wenatchee, Washington. Out of this huge facility — another Stone & Webster project — will soon flow 775,000 kilowatts, and eventually over 1,200,000, to help power the Pacific Northwest's wheels of industry.

Meanwhile, even bigger new dams are taking shape, as engineers rise to the challenge of rivers, one of nature's mightiest and most productive forces.

— Precis

EDITORIAL COMMENT:

As admirable as these developments and achievements may be they are totally inadequate for the total requirements of this Continent.

Progression into the future is more on the basis of guesswork and hope than on the basis of planned direction. How can we have planned direction when every detailed step forward must be debated by political bodies; must be compromised with innumerable business interests; must fight traditional fixations; and must pass the censorship of various anti-progressive committees and institutions?

America is in the midst of a struggle to fulfill its social destiny — a destiny made possible by its wealth of resources and technology. We are in the midst of a battle between the old and the new — scarcity vs. plenty; hand tools vs. technology; the status quo vs. social change. Political bungling must be replaced by flowline social control. One of the many changes that will have to be made within a functional society will be the inauguration of a Continental Hydrology.

The lakes and rivers of the North American Continent are so situated that they provide the greatest opportunity existing on the face of the globe today for the application of a technological control of the Continental hydrology. It is possible to institute on this Continent a hydrology that will provide more miles of water transportation than the rest of the river highways of the world. It would make possible a tremendous development of hydroelectric power, considerably increasing all known engineering estimates of possible hydro-electric power production. It would introduce climatic changes, increase local precipitation, and raise the water table over large areas, rendering possible the reclamation of waste lands and the prevention of desert growth. It would create lakes of large volume in areas at present considered arid—such as parts of North Dakota, Montana, Saskatchewan, and Alberta; it would render possible the transportation of bulk material at an energy cost of one-tenth per ton mile of that of railroad freight haulage, from areas at present inaccessible, to future areas of fabrication and use.

Technocracy invites the engineers and technologists of America to examine the following outline of its proposed Continental Hydrology system.

There will be three main types of inland waterways—seaways, primary waterways, and secondary waterways. The seaways will have 36-foot channels; the primary waterways, 22-foot channels; and the secondary waterways, 11-foot channels.

In the seaway classification, one complete seaway will run up the St. Lawrence River to the head of the Great Lakes. Another will go from New York up the Hudson and into the St. Lawrence via canal to Lake George, Lake Champlain, and the Richelieu River. Another channel will follow the Hudson and replace the present Erie Barge Canal into Lake Erie and Lake Ontario. On these seaways the giant inland water trains of Technocracy and all types of North American ocean-going traffic will operate.

A Network of Waterways

Over the rest of the Continent will be the network of main canalized rivers with their 22-foot depth, and the subsidiary system with its 11-foot channels. One part of this canalized river system of the Continent will provide water transport from the Columbia River on the Pacific slope to the Missouri.

In the far north the Yukon River in season will be a main water highway 1,800 miles long from the Bering Sea to the Pacific Ocean through the Taku Trough near Skagway.

There will be a direct connection between the Fraser River in British Columbia and the Columbia River. The Fraser will also be connected with the Columbia via the Thompson River, Lake Shuswap, and the Okanogan Lakes. In the north, the Fraser will likewise be connected, via the Parsnip, with the Peace River across the Great Divide. And the Fraser will also be connected directly with the

Athabaska to go over the Great Divide through Jasper Pass.

The Peace River will be dammed; the Athabasca River will be dammed; and, via a 'greater' Lesser Slave Lake and by the Athabaska River and canal, will connect with the North Saskatchewan River. The South Saskatchewan will be connected by canalization with the Missouri at a point near Williston, N. D. The North and South Saskatchewans will be dammed and connected west of Prince Albert. These connections will provide main transportation from the Gulf of Mexico to the Arctic, and to the Pacific. The dams on the North and South Saskatchewan Rivers will flood the great Qu'Appelle Valley for 360 miles to connect with Lake Winnipeg.

At Duluth, the Continental hydrology will connect the Great Lakes and the Mississippi by canal. Another canal at the connecting point will go west to join the Mississippi with the Red River, providing water transportation up the Mississippi into Lake Superior or up the Red River into Lake Winnipeg, or from the Great Lakes into the Red River, Lake Winnipeg, Qu'Appelle Valley and on.

In northern Ontario a gigantic project will be undertaken. The waters of the Albany, the Severn, the Attawapiskat and other rivers on that height of land will be dammed, creating Technocracy's Lake Albany, as large as Lake Superior, the largest projected artificial lake in the world. Lake Albany would empty into Lake Superior via Laclong at Jackfish, and would turn the water of the northern watershed south into the Great Lakes, the St. Lawrence, and the Mississippi Systems, producing millions of kilowatts of firm power.

The Continental hydrology will provide secondary water channels on all the main tributaries of the Mississippi east and west—for instance, on the Arkansas to Pueblo, Colorado, and on the South Platte.

The Continental hydrology would dam the Tennessee River at a point below Florence, Alabama, opposite Short, Mississippi, cutting south-west through the ridge to a point below Corinth, Mississippi, and creating a new waterway to the Gulf via the Tom Bigbee River. This would create more power than the entire output of the present T.V.A., and not only would provide a new waterway across Mississippi and Alabama, but would lead the excess water of the Tennessee away without its contribution to flood water congestion in the Ohio and Mississippi.

The Continental hydrology will also involve the reconstruction of the Tennessee Valley, with dams and marine locks built to Continental hydrological specifications. It will involve the canalization of the Delaware, Susquehanna, Potomac, and other minor rivers. On Grand Coulee, Boulder Dam, and other giant structures, double hydraulic lift locks will be built to facilitate marine transport to the upper reaches of the rivers. With these locks the hydrology will establish water transportation from the Gulf of California to Utah with secondary transportation via the Green River to Green River, Wyoming.

Technocracy is only sketching the highlights of what must be done. This is but a glimpse of the Continental Waterways System, as staggering and incredible to doubters as were Continental railways in the early part of the nineteenth century, yet practically and physically possible from an engineering standpoint.

The Continental waterways are part of the coordinated transportation of the Continent. This will be the responsibility of the Engineering Corps of the Continent, which will be charged with the design, maintenance, and operation of this, the greatest of all projects—the Continental Waterways. The arrival of a Technate on the North American Continent will be the next major step in the evolution of North American water transportation. When that time comes, the Engineering Corps can go forward, unhampered by business or political interferences, to create the greatest Continental water transportation system of all time.

This Continental waterways system of the New America involves a far-flung problem of the control of water-flow and the transmission of power. Water and power will be taken from areas of low consumption to areas of high consumption. Then, and not until then, can we have one Continent, one technological control, and one people—one and indivisible.

—From 'A Continental Hydrology'

* The Hoover and Grand Coulee Dams were of such gigantic proportions that their building was beyond the abilities and scarcity values of the Price System entrepreneurs even to contemplate. Therefore it became a must for the Federal Government to do the job.

MY TWO CENTS WORTH

I asked Uncle Zeke if he was thinking of building a fallout shelter like the President and a lot of other important people has been saying we should. He just snorted and said 'of course not.' When I asked him if he didn't think it was the patriotic thing to do, like it would put money into circulation, give jobs to people, and help business to come out of the recession, he said he was already putting all his money into circulation and he wasn't going to borrow and go into debt just so we can have more inflation than we already have.

As for fallout shelters, he said, 'How good are they?' Then he said something like, how are you going to get people to go down into little holes in the ground, especially those with clusterphobia, and expect them to sit there for weeks and weeks with nothing to do but wonder what is happening on the outside? The chances are you would be dead or crazy in a week. But even if we did win the war somehow and the people who were still alive could come out of their holes in the ground, what would they find? Would there be green grass and birds singing? Would there be cows to give milk and fat pigs ready to be butchered? Would the grocery store be open and ready to do business? Would the service station have gasoline? What if nobody could run their jalopies anymore? Would there be electricity for the house?

Those are just some of the things that Uncle Zeke asked, and they made me start to thinking. I wonder if our rights in Berlin or whatchamacallit in Asia is worth that risk even if the President does think so. Instead of using our guns to shoot the neighbors over quarrels about fallout shelters, I think it would make more sense to use them on anybody who says we should have war.

As for me, myself, I think I'll get in as much loafing as I can before I die and laugh at all the people who think they can go back to being cavemen.

— Ima Moron

●

CHINA TO BUILD NEPAL ROAD

TOKYO—Communist China announced recently that grants equivalent to $8,800,000 would be extended to build a highway linking Tibet with Katmandu, the Nepalese capital, Hsinhua, the official Communist Chinese News agency, said the funds were to be given in installations 'unconditionally and without compensation' from July 1, 1962, to June 30, 1966.

—New York Times

MENTAL HOSPITAL POPULATION GROWS

OLYMPIA—Washingtonians are entering mental hospitals in steadily increasing numbers, being released sooner but being recommitted more often, the State Department of Institutions reports.

The department said total admissions increased by 27 percent—more than twice the rate of growth of the state's population—during the six years from 1955 through this year.

At the same time, the agency reported, the number of inmates in the state's three hospitals declined from 7,496 in 1955 to 6,240 this year because patients were being released earlier.

Eighty percent of the inmates admitted during any one month last year were released within one year, the report said. In 1956, 30 percent of the patients admitted during an average month got out within three months while this year the figure had increased to 43 percent.

But during the same six years, there was a 42 percent increase in the number of patients who were recommitted after having been released from mental institutions.

The report also indicated that the number of persons in the state schools for the mentally retarded increased from 3,149 in 1955 to 3,804 on June 30, 1961. During the same period, the number of children on waiting lists for admission to the schools increased from 642 to 964.

—Seattle Post-Intelligencer

●

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Rina Corcoran, Business Manager

Sworn to and subscribed before me this 16th day of October, 1961.

E. J. Schieber
(My commission expires April 3, 1962)

TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in North America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $9.00 which are paid by the member to his local Section. Members wear the chromium and vermilion insignia of Technocracy — the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses, or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every state in the U. S. and all provinces in Canada, and in addition there are members in Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the nearest Technocracy unit.

WHO?

Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to North American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife — so long as you are a patriotic North American — you are welcome in Technocracy.

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THE PROGRESS OF MAN

Primitive man lived in a cave.

He discovered the use of fire, tools, weapons, and how to grow food.

He developed science.

He learned many, many things about himself and his environment.

Through scientific discoveries his way of life became very complex.

He built colossal buildings, bridges, dams, roadways and horrible weapons of warfare.

His world grew smaller and smaller.

It became possible to destroy it with atom bombs. Now a reversal takes place; modern man turns primitive in his thinking. For protection from danger the 'cave' once more comes to his mind. He wants to escape underground from the terrible weapons that he himself has created.

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For man has at last come to the place where he must learn to live in peace with his kind.

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THE NORTHWEST Technocrat

APR. '62

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Sec. 3, R.D. 12247
TECHNOCRACY INC.
Seattle, Washington

Comments On The News

New Frontier Shifts More to the Right

One of the false images of President Kennedy presented to the public during the early part of his administration was that of a pro-socialist. This was the image sponsored by his critics and loyal opposition of the extreme right. His friends tried to present him in the image of a liberal. These images deceived a lot of people, but not those who had a clear background of knowledge in world affairs. The chance of a person being leftist who has any one of the three dominant characteristics of the president is rather remote; but, with all three characteristics combined, it is a virtual impossibility. John Fitzgerald Kennedy is Roman Catholic; he is a multi-millionaire; and he graduated, cum laude, from Harvard University in liberal arts.

Much comment has been made concerning certain seemingly anti-Catholic actions of the president, particularly his opposition to federal aid to parochial schools. This, however, is standard Roman Catholic procedure, especially in countries where Catholics are a minority. Even Napoleon, Mussolini, and Hitler had certain 'controversies' with the Vatican at the same time they were doing the work of the Vatican. It is an age-old trick, designed to misdirect those who think they are on the alert for signs of collusion. . . . In the meantime, the key positions in the lower echelons of federal and state governments are quietly being filled by the Right People. And there are certain infiltrations into top positions: Mike Mansfield, Majority Leader of the Senate; John W. McCormack, Speaker of the House; John A. McCone, Director of the CIA; R. Sargent Shriver, Peace Corps, etc. Outside of government, there is a progressive infiltration and growing control of Labor Unions, financial institutions, entertainment, police forces, and the big city political machines by Roman Catholics. In government, they are strong in the Armed Forces, the Post Office Department, the State Department, and the Justice Department. The shift in control is moving to the reactionary right.

Bad Scoring Season in Foreign Adventures

The New Frontier has attempted several plays on the international chessboard during the past year, and none of them can be considered a win or even a good draw. Cuba and Goa were clear losses. Berlin and Laos are still locked in indecision with the advantage on the other side. The Congo is a mess with the play getting more and more out of our control (and the Russians aren't even in it). The play in South Vietnam is still in progress, but our setup is weak and corrupt. 'Our Man' in the Dominican Republic has been ousted and the Kennedy Administration is glad to settle for something less than it wanted. Western New Guinea offers the New Frontier another chance to play another losing game on the international chessboard.

—Techno Critic

◆

COVER PICTURE

X-RAY ATOM 'WATCHER'

Using a new experimental electronic system for brightening X-ray images, Dr. G. W. Goetze of the Westinghouse research laboratories snaps a picture of the atomic arrangement inside a piece of solid steel. The technique opens up a whole new level of capability in one of the most valuable scientific procedures in use today.

—Photo courtesy Westinghouse Electric

APRIL 1962

THE NORTHWEST
Technocrat

THE RIGHT TO WORK

The question of the 'right to work' has validity only in an economy wherein human toil is an essential means of producing goods and services and also wherein the only way to gain a livelihood is through working for wages. Such a social philosophy may still have validity in some parts of the world, perhaps for a generation or more to come in some places. But on the Continent of North America, it is not only obsolete, it is mischievous and dangerous.

THE GREATEST PROBLEM facing the administration of 'The American Way' is not collectivism versus individualism, nor white supremacy versus racial equality, nor preventive war versus modus vivendi, nor the Haves versus the Have Nots. The greatest and most frustrating problem is finding jobs for American citizens. Unless some forty percent of the population is working at jobs of employment, the 'American Way' is in danger. Already, it has been a decade since forty percent of the people were employed; and the outlook for the future is anything but rosy.

'Automation' is the word which has been applied to the technological process which is most responsible for the change. So, a number of high-cost surveys have been made to determine the effect of automation on jobs. These surveys have been merely boondoggles, perpetrated for the most part to support a pretense that the problem was being recognized and something was being done about it. Actually, the problem has been known for more than forty years and it is fully realized that very little can be done about it within the social postulates of 'The American Way.'

Technocracy arose as the answer to automation long before automation was heard of by that name. The growing trend toward technological displacement of man-hours of employment was recognized and its social effects analyzed and projected prior to 1920. At no time since then has there been any question in responsible quarters about what was happening and what the eventual outcome would be.

But other things were happening which, in net effect, obscured the basic trend and *seemed*, insofar as the editorialists of the Price System were concerned, to contradict Technocracy's early prognosis. The Technocrats did not let the surface phenomena deceive them and they maintained their ground against all criticism and abnegation. Hence, at times, it almost looked as though Technocracy was in error and that the balance-sheet experts of the Price System had the 'real dope from the horse's mouth.' This latter situation attained the status of general acceptance during World War II and the postwar boom, although the whole fabric from which Prosperity was tailored was obviously synthetic—partly a fiction created out of debt, and partly a deception based on the rapid installation of devices and techniques for cutting labor costs.

Now the basic prop of the Price System—of the American Way—once more is obviously shaky. The job supply is running out; and the 'experts' are again going into a huddle to plot the next program of hocus-pocus for validating what to them is the Eternal Scheme of things.

One of the prevailing illusions concerning work is that human beings *need* to work, that work is necessary for proper physiological and psychological adjustment to living. We would expect such mischievous pronouncements to come from moral philosophers (and, perhaps, that is where this illusion had its original spawning), but now this belief has much wider prevalence than merely in the ranks of the mischief-makers. We find people who are normally quite honest and sincere in their thinking voicing this same concept. And, of course, the poor slobs who never do any thinking of their

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own absorb it by suggestion and accept it on faith as they do everything else.

A human being in good health is normally active, which is true of most animal life. But what one is active at need not necessarily be a job of toil. The moralists may point to the squirrel and the groundhog, perhaps even to the ants and bees, to 'prove' their point that work is natural and good—that it is nature's way.

While it is true that certain animal activities tend to have useful results for those animals (or others of their kind), we must understand that their 'work' is instinctive, not premeditated; it is a channel into which their normal activity has been directed by evolutionary processes. Much animal activity is merely play or exercise, having no direct relationship to the needs of life. On the other hand, when animals are hungry, they will seek food; when they are cold (or dry, or hot), they will seek shelter; when they are rutting, they will seek a mate; when danger is near, they will retreat or defend themselves.

Likewise, the human animals will engage in 'horseplay' and, under duress, do that which is necessary for survival and comfort. But man's activities and his modes of response are not outlined for him by instinct. He must learn how to react, either from trial and error experience or from imitation of others. But, if he is healthy and virile, man will be physically active in one way or another. The tendency to engage in active sports, even at considerable cost to oneself, is strong evidence that human beings are not normally 'lazy.' If one does happen to be lazy, it is indicative of physiological or mental deficiency, of disease or other sickness, or of old age. However, normal people vary widely in their general metabolism and they will vary in the amount of their activity accordingly.

To assume that man needs steady work at a job to fulfill his normal requirements for activity is to go beyond factual evidence. Yet, it is true that most people now feel that they must have a job or career, or a reasonable excuse for such, to fulfill their 'destiny.' This is so, even though they may not need the money that the job provides. Such feelings can be attribued to social conditioning by the technique which has lately become known as the 'brainwash.'

Emergence of Man

When man emerged from an animal-like existence into the first social communities, work was not a premeditated part of one's life. However, these early savages did have to work for survival and comfort. They depended upon nature in the wild for their subsistence; they had no plant cultivation and no animal husbandry. Consequently, the consuming requirements of a tribe were usually greater than the natural supplies within the operating radius of the tribal village. They had to move about from place to place in order to get enough to eat. The building of new abodes, the making of trails, and the transportation of supplies were hard work; also, there was the constant hunt for food. When hunting and foraging were good, life was relatively easy. When food was scarce, life was arduous. War-

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fare between tribes was not normal; so, that activity called for no serious drain on the economy.

A great deal of time was spent in dancing, singing, and general playful activity, particularly among the young. The few who survived to middle age, hence were less animated, probably sat around and looked wise, and perhaps quoted proverbs. Much of the work was organized into formalized patterns, such as the construction of dwellings, the building of bridges, and the roundup and killing of game animals. But this activity resulted in benefit to those who did the work. The people worked collectively and shared collectively in the fruits of their efforts. Perhaps some worked harder than others and accomplished more than their pro rata share, but their special rewards were honorary rather than remunerative. And, of course, some were delinquent and had to be carried by the tribe. However, in time of stress, the least productive ones were the first to be sacrificed to reduce the social load.

Concepts of Private Enterprise

The concepts of private enterprise, the accumulation of property and personal wealth, and the commandeering of others to work for the benefit of individual promoters were much later developments. But eventually, the age of barbarism arose and human societies took on new glories and new degradations. Work became the usual preoccupation of the great majority. Now, however, the individuals who did the work seldom benefited from it. They lived miserably, were forced to work at or near their capacity, and normally died before middle age. Some of the work was needed, particularly that which resulted in the production of food supplies, clothing, and shelters. But a great deal of it was squandered on useless endeavors, much of it for the mere ostentation and luxury of an elite master hierarchy. The more ambitious were the social leaders, the more intense were the labors and misery of the great majority of the people, and the more glorious was the reign of the prevailing monarch. Government, religion, warfare, and commerce gobbled up man-hours of toil, as well as human lives, in endeavors that yielded nothing of benefit to the populace.

As social organizations grew more complex and the demands of living increased, at least for the upper classes, the required man-hours of work rose; for, the only way to produce more was to work people more hours. Improvements in technology were exceedingly slow in coming. Significant gains were spaced centuries apart. Voluntary effort on the part of the local population was inadequate to meet the energy needs of the more advanced societies. Involuntary servitude was the principal source of energy. Military conquests were promoted for the acquisition of more 'work engines.' Slavery thus became an institution in all civilized societies. Slaves were treated merely as expense items in production and service, so the upkeep of such was kept at a minimum. Consequently, the life of the slaves was anything but pleasant, and their social status was of the lowest order. In order to get maximal energy output and to insure obedience, the slaves were severely repressed and kept in fear of drastic punishment. The whip became a routine accessory of the slavemaster. Even worse instruments of punishment were held in reserve.

In time, work became associated with slavery, hence it became a symbol of social degradation. The Better People would not sully their lives with toil; they would not be found dead with a work tool in their hands. Their activities, particularly those of the men, were directed away from useful endeavors. The upper class personages were permitted by social custom to engage in the higher echelons of government, priestcraft, finance, warfare, and sports; they often became patrons of the arts. They enjoyed the luxuries and ostentations which the labors of the slaves and the looting forays of the armed forces provided. In barbarian societies, even to this day, work is despised; leisure is a symbol of respectability. In earlier barbarian societies, the great majority had no time they could call their own, certainly not during daylight hours when they could see to work.

Social Repression and Glory

The periods of greatest historical glory were also the periods of greatest repression. The Seven Wonders of the Ancient World were constructed during ages of social glory but at great cost in toil and sacrifice to the working class of those times.

In recent centuries, science became established as a means of systematic discovery. Its achievements led to a concept of progress in the lives of men—a concept which was entirely lacking in earlier centuries. The new technology which grew out of the discoveries of science prepared the way for a new pattern of life. Mass production became organized in factories and was taken out of the homes. Standardization of production was introduced. The First Industrial Revolution was on the way.

The Industrial Revolution was initiated and carried out under the concepts of barbarism—the concepts of slave and master, of capital investment and profit. Most of the work energy still came from human muscles although extraneous energy was beginning to creep in. Men, women, and children worked for specified periods of time under strict, and often cruel, supervision. The employer had no responsibility for their welfare beyond paying them small wages for the time they worked. Consequently, the leisure class became wealthier and more ostentatious. The great majority of workers in industry 'graduated' from chattel slavery into wage-slavery. Although they were technically 'free citizens,' there was little or no improvement in working and living conditions; often these were worse. The usual workday was 12 to 16 hours. Commerce was on the increase, so there was plenty of work for the human engines.

This phase of industrial growth lasted scarcely more than a century. Science and technology continued to advance, and changes were coming in at an accelerating rate. For a while, expansion and increased production provided virtually full employment for all available man-hours. This condition prevailed through the 19th Century. But early in the 20th Century, especially following the great technological improvements developed during the First World War, the factories could not sustain 'full employment' on the old basis. For the first time, it was possible to contemplate a reduction in the working hours per day. For the first time, drudgery began to lose some of its 'blessedness.' Soon the eight-hour workday became recognized as standard, and working people discovered to their delight that they had a few daylight hours to themselves, to enjoy in ways of their own choosing. Further, they had some vitality left for leisure-time pursuits.

There was also an increase in wages and purchasing power. This was not due to any particular upsurge of benevolence on the part of the employers; rather, most of them struggled against it. Other factors were dominant: the labor cost per unit of production was dropping to the point where higher wages easily could be afforded. Production was exceeding the capacity of the market to absorb it. A few of the more farsighted industrialists foresaw the advantage of putting more purchasing power into the hands of the consumers that they might buy more of the goods they produced; they set the trend and others followed. The temporary labor shortages during World War I permitted the organization of labor into unions which forced up the wage rate and allowed the workers to think of themselves for the first time as significant human beings. Aggressive labor union organization, by slow and painful stages, gradually enabled Labor to gain a near-monopoly on the labor supply in certain industries. Management found it expedient to pay higher rates per man-hour as a temporary compromise. This trend became further accelerated during World War II, after which the beginning of the end of the Labor Movement was in sight.

After the war, industrial management found it extremely desirable to displace human workers wherever possible. Technology was called upon to help out in this process, and this it did with telling effect. Although profits were soaring and the labor cost per unit was on the decline, Management still deplored the labor cost of production and welcomed new techniques for reducing this cost.

Technology Speeds Up

As modern technological devices speeded up the rate of production, the human worker could not keep pace and was in the road; his work rate was far too slow and his functions were too imprecise and too erratic. Machines were found to be far better for processes of routine production than were human eyes and muscles. Extraneous energy was far less costly and much more dependable. Further, the human worker began demanding too many fringe benefits, retirement pensions, and improved working conditions along with higher pay. Management found it expedient, profitable, and simple to reduce labor costs through disemployment of the workers. Although Management was not entirely oblivious to the fact that the disemployment of workers cut into the purchasing power of the customers for industrial products, it took the position that the problem of upholding purchasing power was outside the realm of its specific responsibility.

On the other side of the fence, Labor could think only in terms of selling man-hours of work as a means of gaining incomes for its members. It tried to meet the situation of declining man-hours with demands for higher pay and shorter work-weeks plus more paid holidays. This did not solve the problem; it merely provoked Management into further accelerating the reduction in labor costs. The United Mine Workers under John L. Lewis achieved the ultimate in favorable working conditions, wages, and benefits for its members. The only catch to it is that there are very few coal miners left to collect the benefits. In some areas, ex-coal miners constitute a serious welfare problem.

It is no longer a relevant question whether or not people need to work or like to work. There just are not enough 'work opportunities' around to provide jobs for everybody—even if they need work, want work, and like work. Human choice in the matter is now at a low ebb. This situation is similar, in reverse, to that which prevailed for many centuries in the past when the human being was not given a choice between working and not working — he worked or else.

During the centuries of barbarism, the concept of working for a living (for the right to continue living) was so deeply etched into social tradition that, now, very few people can conceive of any other way of getting a living. Profound scholars who study the problem of labor and employment in the context of modern times may conclude that there just are not enough jobs available to provide work for everyone who needs it or wants it as a means of earning a livelihood. They acknowledge that an unprecedented condition has arisen in human society. Still, they are so addicted to the idea of people working for a living that they cannot, or refuse to, see the obvious solution. All they can suggest is that the government take steps to make more jobs of work available through public works programs, or that communities go in for civic improvements which will make jobs or attract new industries to those communities which will provide jobs. It's pathetic.

Technocracy's Vision

Only Technocracy has had the vision to divorce work from the right to consume. Technocracy takes the position that every citizen of this Continent has a birthright to share in the production of the Continent regardless of his status or ability. This is a concept which goes counter to the moral philosophy of many centuries, and it disturbs many people. But it is the only feasible answer to the problems of distribution in an age of automatic technological production. This concept is not entirely new, either; it has been held by the Leisure Class for milleniums, although applicable only to the Leisure Class. Now, for the first time, it can apply to everyone. It abolishes class distinctions.

If the opportunity to consume becomes a function of citizenship, then the question of employment is left open; one does not have to work in order to consume. Who will do the work that needs to be done? When that question is divorced from moral philosophy, the answer is very simple; an intelligent ten-year-old child can figure it out. Adults might have extreme difficulty with it, however; for, they have been too thoroughly brainwashed in the philosophy of barbarism to see the obvious answer.

Division of Work

The answer is to divide the work up equally among the citizens of the Continent and have each do his small share as a function of citizenship. Since the amount of human time and effort required of an individual during his lifetime will be very little, it can be condensed into a fraction of his lifetime and, even then, on a part-time basis. Technocracy has estimated that the time required of the individual would be something like four hours per day, four days per week, forty-one weeks per year, for twenty years of his life, say, between the ages of 25 and 45.

How would the work be evaluated as to quality? It would not be evaluated as to quality for purposes of time-assignments. It would be allocated equally on a man-hour basis. Any other attempts to evaluate the quality of one's work would end up in a philosophical tangle. The man-hour is the only common denominator.

Years ago, Technocracy speakers used to get asked the question, 'Who would do the dirty jobs like garbage collecting and ditch digging?' Applied technology has since eliminated the necessity for answering that question.

Another cliche question asked by hecklers was this: 'What about the guy who wouldn't be willing to do his share of the work?' Such silly questions do not deserve a serious answer, but we will answer it anyway. If a person is physically and mentally incompetent to perform any useful function in the society, he will simply be carried by the society as a dependent. If (and it's a very iffy proposition) any significant number of able persons should decide to make non-function a personal or group cause, then the governing body of the Technate can take cognizance of the situation and formulate a policy concerning them. In the meantime, it is too improbable a situation for us to worry about it. The question is hypothetical, not realistic.

Another cliche question is: 'What will people do with all their leisure time?' We do not consider that question as meriting a serious answer; but, for some reason, it seems to bother a lot of people, so we shall recognize it. Most people will be able to develop sufficient interests to fill their free time with satisfying activity or inactivity. For those who are lacking in imagination and initiative and are devoid of any particular interests of their own, a division of the Personal Service Sequence can be devoted to providing them with a wide variety of popular organized activities in which they can participate and enjoy themselves, either as spectators or as active participants. For the die-hard disciples of toil, we might even suggest that certain construction projects of low utility value and no urgency, where all the work is done by hand tools and human toil, be reserved for those who insist on spending their 'leisure time' in that fashion. Naturally, that suggestion is facetious, but it can be held in reserve for 'emergencies' should the demand for it arise. Actually, we suspect that such activities as mountain hikes, boat cruises, and chess tournaments would attract more 'customers.'

The question of the 'right to work' has validity only in an economy wherein human toil is an essential means of producing goods and services and also wherein the only way to gain a livelihood is through working for wages. Such a social philosophy may still have validity in some other parts of the world, perhaps for a generation or more to come in some places. But on the Continent of North America, it is not only obsolete, it is mischievous and dangerous.

Freedom from toil is not a choice for North Americans of the future; it will be imposed on them by the circumstances of their society. Their function is to adjust to it. The other possible alternatives are migration from the Continent, suicide, or sweating it out at some self-imposed make-work boondoggle of their own. We cannot hold out any promise of finding a job of work in the Technate which will employ one for, say, 12 hours per day, seven days a week, between the ages of 14 and 75, with half days off for Christmas and the Fourth of July. Those 'opportunities' became passe some fifty years ago.

Technocracy offers the people of North America an abundance of goods and services, security, freedom from toil, and a maximal opportunity to lead the lives they choose. If one can find his satisfactions within that framework, we shall be happy; but, if he cannot, it will be his hard luck, and we won't lose any sleep over it.

—Wilton Ivie

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NATIONS PUSH SOLAR ENERGY

Several nations in Europe and Asia are devoting appreciable money and attention to harnessing the 'free' energy of the sun in the everyday service of mankind.

At least that is the impression brought back from a world trip by Dr. George O. G. Löf of Denver, well-known experimenter and authority in the subject of solar heating, with his own house in Denver partly heated by a solar installation.

Dr. Löf said his trip was undertaken in part to inform the United Nations of the scope of world solar work, in preparation for the big U.N. conference on new sources of energy which will be held in Italy from August 21 to 31, 1961.

Dr. Löf said leadership in ingenious ways to harness the sun directly appears most evident in Israel, France and Japan.

He found the solar scientists of those nations putting emphasis both on solar furnaces, to provide very high heat for research and industrial work, and on more modest attempts to induce the gentle heat of the sun to perform more homely daily tasks.

In Japan, he said, there is a large sale of relatively low-cost plastic water heaters, priced at from $9 to $13 each, according to size. He estimated that 250,000 are in use. The first expense is the last. The sun works for the possessor 'free.'

These are simply large bags of heavy polyethylene, the bottom black, the sides and top transparent. They are fastened to the flat roof of a house. In the morning they are filled with water — they hold from 40 to 75 gallons each—and by evening on a sunlit day will have brought the water to the temperature comfortable for the traditional hot bath which the Japanese enjoy.

More elaborate metal water heaters, similar to some already in use in the United States, are also popular with those who can afford them.

Dr. Löf also found experimental house-heating systems in use in Japan, much resembling his own installation in Denver. The sun also is used to grow algae intensively—the tiny one-celled plants which are being explored increasingly as a food source.

He visited one installation which produces about a ton of dried algae a month, from a group of circular concrete ponds covering about an acre. The ponds are about 30 inches deep. The water is drawn off continuously and strained of its algae, then restored to the pond.

Dr. Löf said this installation is commercially successful and will be expanded about 10 times. Production slows down in winter, and the efficiency of the whole thing probably could be increased greatly if covered with glass as is done with a greenhouse.

Dr. Löf found a staff of Israeli scientists and technicians working with projects which he described as outstanding in the world, in the field of solar-energy development.

The greatest effort is going into developing electric power from the hot sun typical of Israel. One installation collects and concentrates solar heat from a parabolic mirror covering more than 3,000 square feet.

The plan is to concentrate this heat on a boiler containing a high-boiling liquid, which by heat exchange generates steam to drive a turbine, or for other uses. Dr. Löf said the efficiency will be high, and altogether this unit, when completed, should be the largest and most efficient solar power plant in the world.

Israel also is working with an 'inverted gradient power pond.' Water saturated with magnesium chloride is kept in a pond covering about 6,000 square feet and 30 inches deep, and with a bottom covered with the salt.

Such a pond loses very little heat, and after exposure to the sun for some months, the water at its bottom gets nearly up to the boiling point, and stays there.

Then it will be possible to run fresh water through pipes laid near the bottom and bring it out very hot. Such a system is possible only where there is a large source of cheap magnesium chloride nearby, such as the Dead Sea.

The Israeli also are working on a low-pressure small turbine which might be run either on vapor from an electrically heated tank, or later by sun power.

Thousands of solar water heaters are in use in Israel. The Israeli, like the Japanese, are interested in house-heating and air-conditioning units which utilize the free energy of the sun.

They are doing much work in studying 'selective surfaces,' which absorb short-wave solar energy at a very high rate, but give off the longer-wave resulting heat at a relative slow rate.

This would make such surfaces better solar collectors, and more efficient sources of heat. And the Israeli are looking also for storage materials which will hold heat for a long time.

Dr. Löf says the French are far advanced in large solar-furnace installations. In these, by means of focusing mirrors, the heat of the sun is centered in one spot to create very high temperatures.

The French, in some of the most massive and expensive projects developed so far, are using such installations both for study of ways of harnessing solar heat itself more efficiently and for learning more about refractory metals and ceramics; and, even more practically, in the actual processing and production of zirconium and some other rare metals.

Dr. Löf found most interesting a French installation very simple in theory. This is the combination under one roof of a solar still for freshening sea water and of a greenhouse in which the fresh water is directly put to working in growing plants.

—Christian Science Monitor

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WILDLIFE NOTE

Members of the House Wildlife Conservation subcommittee were faced with a problem the other day. The Government has undertaken the task of saving the bald eagle, the bird that serves as our national symbol, from real-life extinction.

But it seems that Federal bird watchers are having a hard time distinguishing young bald eagles from golden eagles. So it is proposed to give the golden eagles the same protection as bald eagles.

The point, an Interior Department man emphasized, is not the preservation of the golden eagle but of the bald eagle. After all, he said, the golden eagle serves as no symbol.

Maybe that should be changed. In these days of affluent, not to say wild-living, Government, what could be more symbolic than a golden eagle? If the bald eagle suggests anything any more, it is the taxpayer tearing out his hair.

—Wall Street Journal

SOME THINGS TO THINK ABOUT

. . . As the trends of this age move relentlessly on, they are generating events which are compelling people to analyze their situations. Of course, practically the only source of comment today is some politician, who at the drop of a hat will give one an opinion on anything. As the pressure for social change on this Continent mounts, political interference in North America's social affairs becomes more dangerous. The politician has been charged with bribery, chicanery, and with being a generally undesirable burden to society. *But the most damaging thing that can be said about any politician of this technological era is that he is incompetent to control a technological culture. This is why his method of control must be replaced by a Technocracy.*

. . . We know how 'bad' the Russians are alleged to be in their dealing with us and other peoples. However, we hear very little about the faux pas, absurdities, double crosses and highly questionable objectives of American domestic and foreign policy. Our politics and motivations are not 99 and 44/100% pure. For example, we say we are for freedom, while the Price System of this Continent puts on ever more pressure to discourage any questioning of internal and external policies. The person who isn't smart enough to take a position with Technocracy finds himself labeled a 'dirty communist' if he challenges the status quo. Abroad, we face the challenge of communist politics, which is making steady progress against our republicanism. How do we propose to meet this challenge? At the point of a gun. And what is the U. S. leadership in essence trying to preserve? The 'right' of man to chisel his fellow man. No wonder we are losing abroad to communism. What have we offered to other peoples that is worth their time to consider?

. . . Those who talk of war, and of a quick recovery from its effects in this technological age, are more than ignorant — they are abysmally stupid. For example, when Colonel Drake drilled his first oil wells in Pennsylvania, he got high grade oil at seventy feet. Today, petroleum technologists are drilling to depths of 12,000 feet to obtain oil. Now, what would happen if the highly complex mechanism that we depend upon to live were disrupted by the kind of war we are confronted with in this nuclear age? Not only would this technology be dusted by lethal radioactivity; the power sources to operate the technology would have been disrupted or destroyed. How, then, would you get this equipment functioning again; and where would the trained personnel be found, even to assess the damage?

. . . Just for the fun of it, take your pulse rate. Every time you feel a beat, there arrives in this world a new mouth to feed. As a matter of fact, the rate of world population *increase* is ninety per minute. This explosive rate of population growth is more dangerous than hydrogen bombs to the future welfare of the human race. Those who oppose scientific action to control the birth rate are the enemies of this Continent and all of humankind.

—12247-1

1,108 SEEK TO ENTER SCHOOL FOR RETARDED

OLYMPIA—The number of children awaiting admission to the state's four schools for the mentally retarded has reached an all-time high of 1,108, the State Department of Institutions said recently.

'Unless some solution is found, the waiting list can be expected to double every three years,' the agency warned.

It said that only 67 mentally retarded youngsters were admitted to the schools during the last half of 1961 while 222 others were added to the waiting list.

The department said the establishment of day training centers or group-training homes through cooperation by the state and local communities promises to alleviate the situation partly.

The agency said the day centers offer care and training to mentally and physically handicapped children on the state waiting list. Three are now in operation—two in Spokane and one in Seattle.

The 1961 Legislature appropriated $30,000 from which the department may pay the day centers up to $100 a month for each child enrolled in the case of parents or guardians who are unable to meet the full cost.

—Seattle Times

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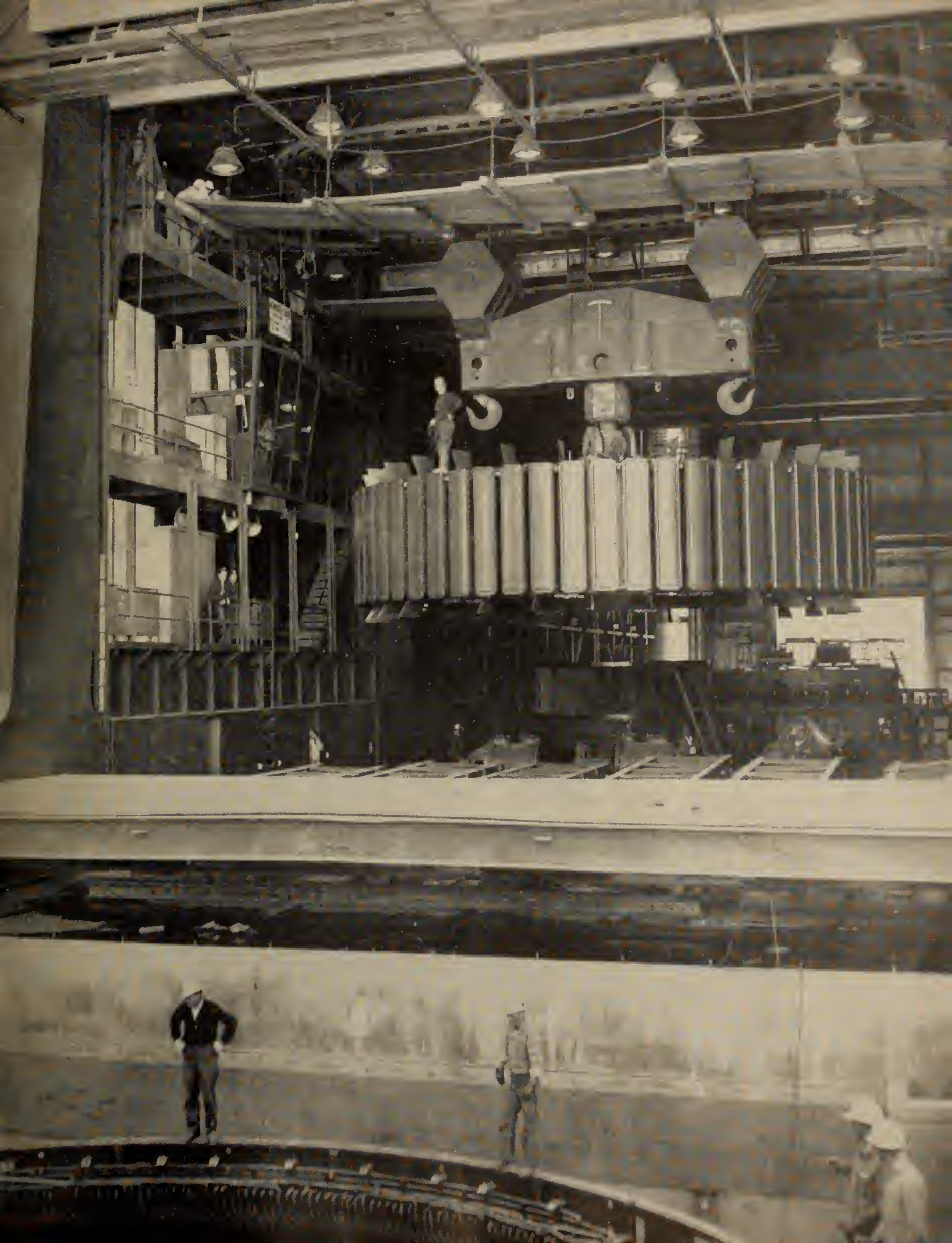
GIANT GANTRY

With the giant generator rotor lifted to a height sufficient to clear intervening equipment, Milwaukee Crane's 630-ton gantry starts its trek to Pit No. 1 at Robert Moses Niagara Power Plant where the first of 13 turbine-generating units are to be assembled. Workers wait at pitside for the lowering while a technician riding atop the rotor relays instructions, via an intercom system, to the crane operator.

—Photo courtesy Milwaukee Crane



A Parasol For The Hurricane

As devout followers of the happy-ending story we might gain pleasure from assuming that the answers to the spread of automation are going to be found in shorter work weeks, longer and more frequent coffee breaks and in the job retraining of millions who, in the next decade, are going to be replaced by robots.

But to do so would be to indulge in dreaming of the most irresponsible sort and to set ourselves up as sitting ducks for the last chapter's devastating scatter shot of reality.

Respected experts in technology are now predicting the possible end of the United States economic system under the full impact of 'cybernation, the silent conquest.' The term is derived from cybernetics, pertaining to the process of communication and control of men and machines.

Some experts are certain that entire job categories ranging from factory and farm workers to bank tellers and middle-management executives are going to be eliminated within the next two decades. The 'blue collar' worker is going to vanish completely from the dock, the factory and the mine. Tremendous cutbacks in employment are sighted for the telephone, dry-cleaning and home maintenance industries. Jobs now performed by tellers, statisticians, salesmen and retail clerks will be sunk without a trace in employment channels.

It seems like handing a man a parasol to protect him against the approaching hurricane to tell him that the blow of cybernation can be met by the extended coffee break, the 30-hour week and job retraining of those lacking enough mental capacity to hold positions other than those that can be performed better by machines.

Of what value will be the shorter work week for the same or more pay when the task has been eliminated, or new tasks developed that need different skills which no amount of retraining can develop in the human hands now performing them?

It is estimated that in the next ten years 26,000,000 untrained adolescents will be entering a labor market where all the jobs they are capable of doing will, for the most part, have been eliminated. Millions of these will be youngsters incapable of doing sixth grade work and yet we say blandly that they will have to be trained for more complicated tasks than they have the capacity to comprehend.

Donald N. Michael, director of planning for the Peace Research Institute in Washington, predicts that the government will have to support a large part of the population through public works, but the ultimate effects on society, he says, 'certainly would not be conducive to maintaining the spirit of a capitalistic economy.' He is convinced that the extension of cybernation, in the interest of free enterprise and better profits, might be self-defeating.

Michael comes to the gloomy conclusion that Americans must develop new standards for living with each other, for doing business and for governing in an automated age.

One transition he mentions is the agonizing shift in style of living required of the unemployed. Some ugly samples of this shift are apparent now in the plight of elderly couples who were required to retire ten years ago on what they then thought would be an adequate income for fairly comfortable living.

Each inflationary round has pushed their standard of living a little lower and in some cases has pushed them out of their own cherished and private quarters and into the sharing of a cramped establishment with married children. For just one such item, the real estate taxes on Cleveland homes has more than doubled in the last ten years while the incomes of many of the owners have remained frozen since retirement. Agonizing is an inadequate word for the adjustments that must be made by the unemployed having even less income than the retired.

While the American way of life is in a period of transition to a way of living based on widespread automation, Michael predicts that the population will be broken up into these four leisure classes:

The unemployed. Most of these will be from low educational backgrounds where leisure has never been more than a respite from labor. These ranks will be increased by the displaced service worker and by well-trained white-collar workers waiting to find jobs or to displace from jobs the less trained. Watching television, gossiping and puttering around the house will be the low-cost time fillers for this class.

Low-salaried employes working fewer hours. This class would probably turn to whatever moonlighting work might be available because of their inability to finance recreation in their increased free time.

Workers with adequate income. As in the past, this group should have no trouble in making use of leisure time since they would be able to purchase desirable free-time activities.

The professionals. Those with no more free time than they now have and which, in most cases, means very few hours of leisure. This fourth group will continue, in the main, to be overworked.

Seen through the eyes of those with enough authority and knowledge to know whereof they speak, the American domestic picture is a complicated and far from rosy one. Whether to run or hide from the effects of enemy radiation is debated on multiple platforms, but little note is taken of the lengthening shadow of cybernation, the silent conquest, that stalks us inexorably within our own borders.

The dignity of man and his respected place in society are menaced by the ringing boots of monsters on the march, and he is being lulled into an expectation of rescue from disaster by the destructive contradiction of doing less to obtain more.

—Cleveland Plain Dealer

U. S. INDUSTRIES PUSH FOREIGN INVESTMENT

New York—The rush of Yankee dollars into investments abroad is dramatized by General Motor's announcement it is sharply increasing its overseas capital spending.

G. M. sights a growing market abroad for its products—and apparently feels it can best assure this market by building and expanding its plants on the scene.

The general trend in foreign-investment outlays is noted by the Department of Commerce. It says United States manufacturers this year are spending $1,300,000,000 for foreign plants and equipment.

This is almost as much as the record of $1,350,000,000 in 1957, and $100,000,000 more than was spent in either 1958 or 1959.

The motor industry has been one of the leaders in this movement. But the oil industry probably ranks first.

The petroleum department of the Chase Manhattan Bank of New York puts American oil companies' fixed assets abroad at $16,000,000,000 out of a total industry overseas investment of $42,600,000,000.

This is in addition to the $54,700,000,000 of the industry's fixed assets in the United States. Total investment in the non-Communist world expanded 2.8 times between 1949 and 1959.

American rubber companies also have spent large sums abroad. The Department of Commerce says that last year 27 percent of their plant-and-equipment spending was overseas.

Electrical manufacturing and chemical companies each spent 15 percent of their budgets abroad.

Ardor for these overseas outlays apparently is only slightly dampened by recurring political crises, one of the latest being Cuba's seizure of American plants and investments.

Private United States investments abroad also have been cited as one of the reasons that for three years more American dollars have been going overseas than have been coming back as payment for exports or as return on investments.

Added to the costs of imports, foreign aid and foreign travel, this has been a factor in a marked loss in the United States supply of gold.

This was recently dramatized by a rise in the price of gold on the free market well above the legal United States price of $35 an ounce.

Only about a fourth of the investments abroad comes out of funds originating in the United States, the Commerce Department says.

The firms get at least half of their requirements out of retained earnings of their overseas plants and from depreciation and depletion charges. And in 1959 foreign creditors and investors supplied almost $1,000,000,000.

—Associated Press

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ON PRESIDENTS

Roosevelt proved a man could be elected President any number of times; Truman proved anyone could be President; Eisenhower proved we didn't need a President; and Kennedy is proving it is dangerous to have a President.

IMPACT OF TECHNOLOGY ABROAD

More profoundly disturbing to the Old Order, more devastating to the age-old ideas of mankind than any political concept, past or present, is the march of technology around the world. Social change, induced by technology, population pressure and the simple desire of peoples for something better than they have now, is breaking down the Gates of the Old Order. Nothing, short of total annihilation, will stop social change either in North America or abroad.

HYDROELECTRIC WORKS

The $28 million Miranda do Douro dam and underground power station situated on the stretch of the upper Douro River that forms the frontier between Spain and northeast Portugal, were inaugurated in July. The annual capacity of 810 million kilowatt hours is provided by three groups of Francis generators, each of 80,000 horsepower, coupled with three-phase alternators of 60,000 kilowatt amperes each. This dam and the Picote dam on the same river account for 13 percent of the entire Portugese hydroelectric output. Within the next three years the Bemposta dam and power station will be completed and will provide a further 990 million kilowatt hours. The Picote and Miranda do Douro dams provide power for the steel industry which came into production last May.

—Foreign Trade, Lisbon

—Even European Fascism must bend to the march of technology that is today becoming the dominant force in the world.

REDS BUILD BIG TURBINE

MOSCOW—A 50,000-kilowatt gas turbine, the biggest in the world, has been built at Kharkov in the Ukraine, Tass, the Soviet news agency, reported.

—Seattle Times

SOVIETS INCREASE MACHINE TOOL CAPABILITY

By 1965 Soviet Russia will have more machine tools in place than any other nation in the world. More than that, the average age of its machines will be much younger than those of the United States. About 60 percent of its machine tools will be less than ten years old compared with 40 percent here.

Russia will have attained this enviable position by reason of a seven-year program (1959-1965) calling for production of 1,134,000 cutting machines.

Better than 600,000 machine tools will have been replaced in this seven-year period, or 30 percent of the total installed machines in 1959.

Greatest concentration in replacement will be in the machine-building industry, where half or more of the units installed in 1959 will have been replaced by 1965.

This information about the stature of Russian machine tool resources stems from a report made by A. E. Prokopovich and published by the State Scientific-Technical Publishing House of the Machinery Industries.

Russia built 164,000 cutting-type machine tools in 1961 and 30,500 forging machines and presses.

—American Machinist

IRAQ PLANS TO BUILD REFINERY IN BASRAH

BAGHDAD—Premier Abdel Karim Kassem said Iraq will soon build its own oil refinery in Basrah and will need still another refinery to process oil from territory returned to Iraq by commercial oil companies.

In an interview published in the newspaper Al Thawra, Mr. Kassem said that the latest drilling equipment soon would be shipped to Iraq 'to enable us to produce oil ourselves and thus establish an oil industry run by Iraqis and assisted by friendly countries.'

Mr. Kassem also indicated there were plans to establish a petro-chemical industry after necessary studies were completed.

Earlier this month the government restricted the operations of the Iraq petroleum group of companies to their present oil fields and requiring the return of all other concession areas to the government.

—Journal of Commerce

SOVIET SHIP TO RUN WITH NO ONE ABOARD

Russia is building a fully automated ship that will operate with no one on board, a United States official reported recently.

Two other vessels being built in Russia — 45,000-ton tankers—are designed so that one man on the bridge can operate turbines, boilers and machinery.

The Russian adventures into automation at sea were described by Maritime Administrator Donald W. Alexander at a meeting of the Marine Society of New York.

Alexander said that the Inzhener A. Pustoshkin, a shallow-draft tanker, is being converted in the Baku shipyard for fully automated operation on the Caspian Sea, the Associated Press reported.

The vessel will make experimental voyages on the open sea while controlled from the shore, Alexander said.

—Associated Press

U. S. GROUP GETS OK ON BIG STEEL MILL IN PAKISTAN

NEW YORK—A group of United States companies has received approval for a $136,500,000 steel mill project in Pakistan.

Champ Carry, chairman of Pullman, Inc., of Chicago, announced recently that the group had official approval from the government of Pakistan to build the first major steel plant in that nation.

The plant will produce 350,000 tons of new steel a year from pig iron and scrap steel.

Members of the group are operating under the name Swindell-Dressler Corp. and Associates.

—New York Times

TV FOR INDONESIA

TOKYO—Nippon Electric Co., one of Japan's top telecommunications firms, has concluded a deal with the Indonesian Government for telecasting facilities worth roughly $1 million.

The 50-kilowatt TV transmitter ordered by Indonesia is the largest to be exported by NEC. Up to now, the Sumitomo Group firm has accepted orders for erecting TV stations in Cambodia, the Philippines, Singapore and Okinawa, with the largest 50-kilowatt units going to Cambodia and Okinawa.

—Journal of Commerce

70,000 HOUSES BUILT

LIMA — The National Housing Institute announces completion of a two-year plan to construct 70,000 houses in Peru at a cost of about $50,000,000.

—Seattle Times

RIVERS TO REVERSE FLOW

Premier Khrushchev, in a speech to the Agricultural Plenum, has approved a scheme to partially reverse flow of Pechora and Vychegda Rivers and thereby raise the water level of the Volga River and Caspian Sea. Pechora and Vychegda now flow into the Arctice Ocean. Their waters will be diverted into Kama River and then into the Volga. Large reservoirs will be built on the rivers and linked by canals. Plan is to divert 40 cubic kilometers of water annually.

Power stations to be built on Kama and Volga would then produce electricity at half the cost of those already existing on the Volga. Power-generation potential on these two rivers might increase by 2.3 milliwatts.

—Power

INFLATABLE SHIP

The largest inflatable ship in the world, Amphitrite, weighs six tons and is 65 feet long, yet draws only 14 inches of water when fully loaded. The ship serves in Capt. Jacques-Yves Cousteau's underseas explorations as the tender of his small, jet-propelled diving saucer, the National Geographic magazine says.

—Christian Science Monitor

POONA, INDIA

Major world markets may soon feel the impact of competitively priced semiconductors carrying the label, 'Made in India.' A facility now under construction by Semiconductors Private Ltd., is expected to produce transistors and diodes by the end of the year. The government-licensed firm is owned jointly by Raytheon Co. and two Indian businessmen, I. T. Mirchandani and T. J. Lalvani. Raytheon's Semiconductor Division will supply capital, equipment, engineering information, and manufacturing training for the new plant.

—Automation

South Africa is considering plans for a 550-foot dam on the Orange River which would cost $132,000,000.

—The Seattle Times

IRRIGATION STARTS IN INDIA DESERT

JAIPUR, India—India's vast desert bowl of Rajasthan began receiving irrigation water recently to make its dreary wastes bloom into fertile fields.

The waters gushed forth into the sandy expanse, parched since the beginning of history, as Acting President Sarvapalli Radhakrishnan pressed a button at a colorful ceremony.

When completed at a cost of $426.3 million, the world's largest network of canals and field channels—40,000 miles —will open up 10,000 sparsely inhabited square miles to agriculture.

Nearly 20,000 laborers will toil for the next 15 years to remove 11 billion cubic feet of sand to make way for the canals.

Two million people will be settled in the vast area, where 3.6 million acres of desert will be irrigated. The government expects the land to yield 2.5 million tons of grain, worth $195 million at present rates.

—Associated Press

FIFTY CARS A DAY

ALGIERS—This country's first auto-assembly plant is now in operation, and plans call for the assembly of 50 vehicles a day.

—The Seattle Times

STEEL

PHILIPPINES—Government participation in a proposed integrated steel plant to be erected by the Sta. Ines Mining Corporation in Laguna Province near Manila, has been approved in principle. It is reported that the plant will produce 130,000 tons a year of steel billets and pig iron, which will replace the scrap now being used by several of the country's steel mills.

The various government financing corporations have approved the plan in principle and the Philippine National Bank and the Development Bank of the Philippines have guaranteed the machinery to be purchased from Germany on the first payment. Krupp Enterprises will supervise the construction and operation of the mill and will furnish $28 million worth of machinery. The central bank will make dollar allocations for amortization payments as they fall due.

—Foreign Trade

Two Australian engineers have perfected plans for salt-water-conversion plants powered by British atomic reactors now available. A plant to produce 80,000,000 gallons of fresh water daily, sufficient for a city of 500,000, would cost $200,000,000.

—The Seattle Times

RICE YIELD

DACCA, East Pakistan—New cultivation methods introduced here have boosted the rice yield to five times the crop obtained by normal methods.

—San Francisco Chronicle

DEVELOPING SOCIAL PROBLEMS

CRISIS AT THE CENTER

After last April's Cuban fiasco, the State Department announced rather breathlessly the creation of a 'crisis center,' an around-the-clock watchdog operation able to cope with overseas emergencies in a hurry.

Well, we see by the papers that the center is quietly folding up shop. In truth, it never really got off the ground. The center couldn't find a place in the established channels of policy-making communication and coordination. Older Department bureaus jealously guarded their prerogatives.

So the agency that was supposed to knife through official red tape has instead been strangled by it. If its demise suggests anything, perhaps it's the desirability of a new 'crisis center' to unsnarl the State Department.

—Wall Street Journal

MORE PUBLIC SUPPORT FOR SCHOOLS URGED

WASHINGTON — Rising costs may put the nation's private colleges out of reach of all but the wealthy, Louis T. Benezet, president of Colorado College, said.

Benezet told a conference of educators and labor leaders that greatly increased public support—in the form of scholarships and perhaps even outright grants — may be necessary if equality of educational opportunity is to be retained.

The average cost for a year in the most selective private colleges is about $3,000 in the East and $2,500 to $2,700 in the West and Midwest, he said.

Benezet said, 'It seems likely that the leading liberal arts colleges ere long will be catering entirely to the same small economic class that now patronizes the independent secondary schools.'

—Associated Press

—Education in a Technocracy would be released from its hopeless entanglement with bond issues and tax levies and also freed from dependence upon the charitable inclinations of philanthropists. In addition to economic security in a Technocracy, each child would be guaranteed equal educational opportunity with no limitation whatsoever, other than his own ability.

COLLEGES COMPLAIN OF FUNDS LACK

SPOKANE—Students at Washington's three state colleges are paying extra fees because the Legislature failed to provide needed funds, it was charged here recently at a joint meeting of the trustees.

Dr. Archie Wilson, a member of the board of Central Washington State College, Ellensburg, called student costs at Central, Western and Eastern state colleges 'already too high.'

Dr. Don S. Patterson, president of Eastern, said quarterly costs are to increase to more than $70.

—Seattle Times

Americans spend $325,000,000 a year for dog food.

—The Seattle Times

KENNEDY HINTS STOCKPILE SCANDAL

WASHINGTON—The Kennedy administration aimed recently for a wide-open investigation of whether excessive profits were reaped from the government's stockpile of strategic materials.

The government since 1939 has been piling up supplies, largely raw materials, that would be needed badly in event of war. The Second World War cut the stockpiles down, but the buildup began again after the war.

Since the late 1940s, the government steadily has acquired larger amounts of more than 70 critical materials ranging from aluminum and nickel to duck down and opium.

President John Kennedy told his news conference he was astonished to find that the total stockpile now includes materials worth $7.7 billion—more than the agricultural surplus held by the government.

According to Kennedy, this exceeds emergency requirements under the present concept of war by about $3.4 billion.

The stockpile program falls under the management of the Office of Emergency Planning, a remnant of the Eisenhower administration civil defense organization. It is headed by Frank B. Ellis.

Kennedy said, 'This excessive storage of costly materials is a questionable burden on public funds, and in addition, a potential source of excessive and unconscionable profits.

'The cold facts on this matter must be open to the public,' he said in announcing steps to correct the situation without disrupting commodity prices.

'The cloak of secrecy which has surrounded this program may have been justified originally to conceal our shortages,' the president said, 'but this is no longer the case, and secrecy now is only an invitation to mismanagement.'

—Vancouver Sun, Vancouver, B. C.

FOOD STORAGE SURVEY SLATED BY U. S. ABROAD

WASHINGTON—The U. S. Government will undertake this year, a broad survey of the transportation terminal and storage facilities of countries receiving U. S. food and fiber under U. S. Food for Peace program.

The resulting recommendations could conceivably bring more business to U. S. firms specializing in port and distribution systems, according to George McGovern, Director of Food for Peace. It is entirely possible he said, that the U. S. Government might finance projects to improve these facilities in countries drawing Food for Peace aid.

Currently, Food for Peace operations reach more than 150 countries, almost all less-developed lands. India and Pakistan, however, are the two likeliest countries to receive U. S. help in developing handling facilities. Both nations take well over $100 million worth of U. S. commodities annually under Title I of Public Law 480.

Paul S. Willis, president of the Grocery Manufacturers of America and chairman of the Food for Peace council, will appoint the committee to carry out the port and distribution survey. The committee will comprise industry representatives working under Government auspices.

—Journal of Commerce

BILLIONS IN STOCKPILES

WASHINGTON—A Senate-House committee reported recently that the federal government had $14,300,000,000 worth of goods in stockpiles at the end of October. This included $5,400,000,000 worth of surplus farm commodities.

—Seattle Times

SECOND MEET CALLED ON 'CRISIS OF ABUNDANCE'

WASHINGTON — Agriculture Secretary Orville L. Freeman asked a conference on land and people to consider needs and uses of national land and water resources as part of a food and agriculture program for the 1960's.

This was the second national conference in five days called by Freeman to wrestle with problems caused by agriculture's crisis of abundance. The first conference dealt with food and people.

The simple fact is, farmers in the United States are producing too much food for the demand. As a result, farm income is low, and farm program costs are high and rising.

Agriculture Department and Kennedy administration planners hope solution of the crisis of abundance on a long-range basis will bring better income to farmers, elimination of farm surpluses and lower farm costs to the taxpayer.

Among delegates invited to the conference were leaders of state and federal governments, conservation (soil, water and forestry), recreation and sports, civic and religious groups, education, farm organizations, rural and urban planning, cooperative organizations and credit specialists.

Willard W. Cochrane, director of agricultural economics, outlined land needs of agriculture through 1980.

Cochrane said that even though domestic use and export requirements through 1980 would require an increase in farm output of 41 percent above 1959, the land needed would be 51 million acres less than now is in cultivation and rotation pasture.

In short, he said, food and fiber needs in 1980 would not take up the slack in farm production capacity, assuming yields continue their upward trend.

Cochrane said consideration should be given to needs of a growing population for land as space — for houses, businesses, roads, military proving grounds and even cemeteries.

The credit specialists were concerned with how to bring resources to unemployed farm people, instead of such people moving to the resources.

—United Press International

MIAMI SEEKS FOOD FOR HUNGRY YOUTHS

MIAMI, Fla.—Thousands of youngsters here 'who had at least one good meal a day during the school year now have little or nothing to eat.' That's the grim report received by the Miami Board of Commissioners at a meeting here. As a result, the commissioners voted to seek Federal surplus food for the city's needy families. At school, children of these families received free lunches.

—Labor

SCIENTISTS SWEPT AWAY IN FLOOD OF INFORMATION

BOSTON—Are you keeping abreast of this changing world?

No matter how well informed you are, you probably aren't keeping up, according to members of the American Documentation Institute.

You and every human being in the world are now being affected by a flow of information which is turning into a torrent.

Information is accumulating so fast that it is doubling every ten years. There are now an estimated 60,000 technical and scientific journals being published in the world. And an additional 1,500 new journals start publication every year.

Prof. William Lock, director of the Massachusetts Institute of Technology libraries, said.

'The only way to cope with the amount of material coming out is to find a way for machines to pre-digest it for us and put it into some more accessible form.'

Even our language is changing. New words are rushing into vocabularies. Meanings of old words are changing. Some old words are being discarded.

How do you—if you are a doctor—keep abreast of development in the chemical treatment of cancer when there are 4,700 medical journals to read?

This is the sort of thing a thousand information scientists, computer technologists, mathematicians, logicians, linguists, electronic and mechanical engineers, librarians and technical research management were considering today.

Last year, about 30 million patients were discharged from hospitals in the United States. Each left a medical record to be added to more than half-a-billion earlier records. These records contain a vast amount of valuable medical information particularly useful to research. How do you get at this information? A library of more than five million abstracts has been started. It is now growing by 1.8 million abstracts a year.

It is hoped that some day electronic machines may help detect and report, automatically, even subtle changes in medical practice.

—It is becoming rather obvious that a Research Sequence, as proposed in Technocracy's Blueprint, is not only desirable but mandatory to coordinate and make available the growing accumulation of scientific data.

RAIL EARNINGS DIP

NEW YORK — Railroad earnings for 1961 appear headed for a 15-year-low—probably less than $350 million, Railway Age, industry newsweekly, said recently.

Combined net income of the nation's railroads fell in 1960 to $445 million, lowest since 1949.

The earnings estimate was given in a plea for government help in solving rail problems.

—Associated Press

BILLIONS IN AID

WASHINGTON — Unemployed workers got a record $3,790 billion in unemployment benefits from federal and state programs last year, according to the Labor Department.

—Seattle Post-Intelligencer

CONTINENTAL TRENDS IN TECHNOLOGY

LARGEST TURBINE GENERATOR

Canadian General Electric announces receipt of an order to supply a steam generator—worth close to $850,000—for the Port Alberni, B. C., plant of MacMillan, Bloedel and Powell River Limited.

Largest power package of its kind ever produced for the Canadian pulp and paper industry, the CGE generator for MacMillan, Bloedel is rated at 20,000 kilowatts, 3,600 rpm.

—Canadian Pulp and Paper Industry

HALF A MILLION VOLT TRANSMISSION

Westinghouse Electric Corp. has a contract with the Virginia Electric & Power Co. to engineer and equip a 500,000-volt transmission system. (Westinghouse says 345,000 volts is the maximum transmitted in the U. S. now.) The power station will be in the coal fields of West Virginia. Reason: it is cheaper to transmit the electricity than it is to haul the coal to generating plants in electrical 'load area.'

—Steel

FIBERGLAS SPARE FENDERS FOR CARS BEING MARKETED

DETROIT—Fiberglas-reinforced replacement front fenders that won't rust or dent and are cheaper, lighter and more easily repaired are being marketed for the first time in U. S., Owens-Corning Fiberglas Corp., maker of the reinforcing material, said.

Durox Corp., Cleveland manufacturer of automotive paints and body repair materials, is distributing replacement fenders for all Ford and Chevrolet models and some Plymouth, Dodge and Buick models. The fenders currently are being made by Plaza Fiberglas Manufacturing Co., Toronto, but Durox will start making the fenders in a Cleveland plant early next year.

The Fiberglas-reinforced plastics are currently used in Chevrolet's Corvette sports car and truck body components including entire cabs of some models. Owens-Corning said the fenders withstand greater impact than steel and do not transmit damage to the other car parts.

A marketing survey, Owens-Corning said, showed 1,650,000 replacement fenders are sold in the U. S. each year.

—Wall Street Journal

SOLAR STOVE WORKS UP TO 6,000° OF HEAT

A large disk-shaped solar concentrator developed by Goodyear Aircraft Corporation's Arizona division can work up to 6,000 degrees of heat at its focal point. The instrument is used to test materials for outer-space vehicles. Its maximum heat output is enough to turn most metals to boiling liquids.

—Midwest Engineer

ULTRA HIGH SPEED PRINTING

Recent advances in solid-state electronics and rapid film processing could result in a system for the reproducing of printing, including fine-quality pictures at speeds rivalling the fastest computers, asserts J. K. Moore, CBS Laboratories. Developed for the military, CBS's Vidiac phototypesetter generates 2,000 characters per second. Such machines could chew up the tremendous job of alphabetizing, inserting, deleting, collating, page makeup and typesetting of the 1800-page Manhattan phone directory in a single day.

—ISA Journal

POWER FROM MOLASSES

If current research works out, the U. S. someday may use molasses as a source of electricity, reveals International Management, McGraw-Hill publication. Engineers are working on a biochemical fuel cell based on energy given off by decaying materials such as molasses, wood cellulose and sawdust.

—Midwest Engineer

TACOMA MOVING SIDEWALKS IN OPERATION

Tacoma is moving sidewalk traffic by conveyor belt. The steep Washington city is using moving sidewalks to shuttle shoppers up and down the hillside of the central commercial district in the culmination of a project started two years ago. Two sets of rubberized mobile ramps have just been placed in operation, and two more will open soon. They can move 7,200 persons an hour at 90 fpm on an 11-degree grade.

—Civil Engineering

NEW STEAM GENERATOR

Mammoth steam-generating boiler to power its record-breaking 1,000,000-kw. turbine-generator has been ordered by Con Edison. The electric generating facility will be located adjacent to Con Edison's East River generating station at the foot of 14th Street, New York City. The $131-million installation is scheduled for operation in 1966.

The boiler will be designed, manufactured, and erected by Combustion Engineering, Inc. A feature of the design will be the division of the boiler into two sections so that the electric generator can be operated at half power even though one section of the boiler is shut down.

The unit will be designed to burn pulverized coal or oil. When operated at peak load about 350 tons of coal will be burned in the boiler every hour. The unit will be capable of turning 6,500,000 pounds of water into 2400-psi, 1000-F steam every hour.

Mechanical and electrostatic precipitators will remove more than 99 percent of the fly ash.

—Power Engineering

MIDGET LEAK DETECTOR

Goldak Company, Inc., has announced a new midget, highly sensitive, electronic leak detector. The Model ML-61 weighs 20 ounces, and is capable of detecting all types of water leaks under dirt, pavement and other surfaces with pin-point accuracy. A sensitive one-inch-square Rochelle Salts crystal microphone has a special mounting assembly which accepts the important leak vibrations and minimizes extraneous sounds.

—Roads and Engineering Construction

AUTOMATIC COAL SYSTEM ORDERED FOR POWER PLANT

A pushbutton coal preparation, stockpiling, reclaiming, and conveying system for the Four Corners Power Plant of Arizona Public Service Company, located at Fruitland, New Mexico, has been contracted for through Hewitt-Robins, of Stamford, Conn. The $1.5 million system, designed by Hewitt-Robins, features the first rotary bucket wheel coal-blending and reclaiming system to be installed for power plant use in the United States.

The new $62 million power plant, scheduled for completion by January, 1963, will have an initial capacity of 350,000 kw. with capacity for expansion to 1,000,000 kw.

—Civil Engineering

Bethlehem Steel Company's new West plant at its Hanover, Pa., quarry is nearly completed. The plant, designed to crush and screen limestone, is expected to produce up to 1200 tons of stone an hour. Full operation of the new limestone plant is scheduled for 1962. Able to produce both commercial and metallurgical grades of limestone the plant will ship most of its annual production of 4,000,000 tons of limestone to Bethlehem's various steel plants, with the major portion going to its Sparrows Point, Maryland, plant.

—Mining Congress Journal

$40,000,000 PULP-MILL EXPANSION SET

VANCOUVER, B. C.—MacMillan, Bloedel & Powell River, Ltd., announced it will proceed with a $40,000,000 expansion to its Harmac pump mill at Nanaimo.

Hon. J. V. Clyne, chairman of the board, announced that clearing for construction is under way and the project is scheduled for completion in the spring of 1964.

The expansion, described by the company as the first major industrial expansion in British Columbia in 1962, will increase capacity at the Vancouver mill to 400,000 tons from 250,000.

—Seattle Times

ELECTRONIC EAR VERY KEEN

TUCSON, Ariz.—An electronic ear that hears as well —if not better—than the human ear is in operation at the University of Arizona.

The developer, Dr. John L. Stewart, a professor of electrical engineering, says it is the first such model ever constructed.

In its present form, Stewart said the model can be used to improve diagnoses by hearing and speech specialists or for forecasting the outcome of operations.

Using the model as a foundation, he believes models which will listen and then respond can be developed.

As an example of the latter, he cited typewriters that might someday take dictation.

Stewart headed a five-man team which used a $56,838 Wright Air Development division contract to finance its research.

Other members were audiologist Kenneth Dommick and graduate students William Caldwell, Ewald Glaesser and Richard Brooks.

—Associated Press

FAST FREIGHT

MONTREAL—Canadian National Railways officials say their new $30,000,000 storage yard can sort and store more than 7,000 freight cars daily on 24 tracks.

—The Seattle Times

COMPILER CUTS EDP PROGRAMMING

A compiling system has been completed by Minneapolis-Honeywell's Electronic Data Processing division that is said to eliminate up to 90 percent of the manual effort in programming scientific and engineering problems for solution on the Honeywell 800 electronic computer.

The new system, known as the Honeywell Algebraic Computer, is being delivered to Honeywell users, according to Walter W. Finke, president of the EDP division.

The Honeywell Algebraic Computer, he explained, is an automatic coding system that accepts instructions written in ordinary mathematical statements and automatically expands these into the far more detailed machine language needed by the computer to solve scientific problems.

—Blast Furnace and Steel Plant

PLASTIC COATING WITHSTANDS 6,000° F.

A lightweight plastic coating has withstood temperatures up to 6,000° F. in field tests.

Called Dyna-Therm D-65, the coating consists of phosphates and boron compounds held together by a polyurethane binder. It was developed to protect various missile and launching pad components which are usually destroyed in missile firing.

When heat is applied to the surface of the coating, a hard ceramic crust is formed which glows red-hot and reflects heat. Also this crust lifts away from the rest of the film, providing a further insulation.

The plastic coating is produced by Dyna-Therm Chemical, Culver City, Calif.

—Science Digest

'PREFAB' HOUSE FIRMS FORMED

MEXICO CITY—Portable houses are being made by a new company, Casas Completas Transportables, in San Luis Potosi. The entirely Mexican company is under the directorship of Gen. Juan F. Azcarate, one of the promoters of the Lockheed-Azcarate factory making light planes in the same city.

The factory was built in three months by a Mexican engineer, Teodoro Gonzales Ballesteros. The prefabricated houses will be of metal sheeting lined with wood and will be of two sizes, the smaller selling at $2,200, and the larger with three bedrooms, fully furnished, at $4,000.

—Journal of Commerce

TAPES CONTROL DIEMAKING

One of the last areas where the machinist's skill reigns supreme is about to yield to automation. Automakers are ready to convert diemaking to tape-controlled machine setups. Several units have been secretly tried out on an experimental basis for several years. Now, some auto companies are installing production units. Big gains lie in the mathematical development of curves or large body dies. Up till now, this was a cut-and-dry proposition which extended lead time.

—Iron Age

Do You Know This Man?

A reader has sent us the following word picture of a twentieth century American:

A young man lived with his parents in a public housing development. He attended public school, rode the free school bus, and participated in the free lunch program. He entered the army, then upon discharge retained his national service insurance. He then enrolled in the state university, working part time in the state capitol to supplement his GI education check.

Upon graduation he married a public health nurse and bought a farm with an FHA loan; and then obtained an RFC loan to go into business. A baby was born in the county hospital. He bought a ranch with the aid of the veterans' land program and obtained emergency feed from the government.

Later he put part of his land in the soil bank, and the payments soon paid off his farm and ranch. His father and mother lived very comfortably on the ranch on their social security and old-age assistance checks. REA lines supplied electricity; the government helped clear his land.

The county agent showed him how to terrace it; then the government built him a fish pond and stocked it with fish. The government guaranteed him a sale for his farm products at highest prices. Books from the public library were delivered to his door. He banked money which a government agency insured. His children grew up, entered public schools, ate free lunches, rode free school buses, played in public parks, swam in public pools, and joined the FFA. He owned an automobile so he favored the Federal highway program.

He signed a petition seeking Federal assistance in developing an industrial project to help the economy of his area. He was a leader in obtaining the new post office and Federal building, and went to Washington with a group to ask the government to build a great dam costing millions so that the area could get 'cheap electricity.'

He petitioned the government to give the local air base to the county. He was also a leader in the movement to get his specific type of farming special tax write-offs and exemptions. Of course, he belonged to several farmers' organizations, but denied that they were pressure groups.

Then, one day, he wrote to his Congressman: 'I wish to protest these excessvie governmental expenditures and attendant high taxes. I believe in rugged individualism. I think people should stand on their own two feet without expecting hand-outs.

'I am opposed to all socialistic trends, and I demand a return to the principles of our Constitution and the policies of States Rights.'

Do you happen to know this man?

—The Brookville American, Brookville, Pa.

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SOVIET FIGURES SHOUT EDUCATIONAL UPSURGE

The Soviet Union keeps making startling progress in the spread and depth of its educational system.

Latest figures fully bear out that the Soviet educational system is being broadened and strengthened to the point where it can turn out the scholars, natural scientists, diplomats and general thinkers needed to carry out Moscow's ambitious worldwide plans.

Material based on the 1959 census tells a sensational story. In this once-backward, and on the eve of World War I still largely illiterate, country, nearly one-third of the population (28 percent) now has a completed middle school or college education.

The educational level is much higher if only those gainfully employed are counted. In this group 43 percent have had seven years of school or have had complete or partial university or college training. University or college training is reported for more than one-tenth of the working population.

At the time of the previous census, in 1939, only about 12 percent of those gainfully employed had middle school or university training. The increase from 12 to 43 percent within 20 years, of which five years were the grim war years, is even more impressive and of greater significance for the future than are the startling industrial production figures published at the end of each plan period.

It is true that specialists in the field of Soviet education believe that the census figures may be between 20 and 25 percent too high as far as college and university training goes, because party schools are included among institutions of higher learning. Still, the rise in the over-all educational level, even if the figures for higher education are reduced by one-quarter, remains impressive.

Most astonishing is the educational progress in the countryside. Of every 1,000 collective farm peasants—the bulk of the Soviet Union's agricultural population—212, that is more than one-fifth, have been through a seven-year school or have had higher education. This figure does not include managers and specialists. In 1931, only 15 in 1,000 had reached this educational level. This extraordinary increase in the education of the manually employed farm population illustrates the political and social change which has come over the Soviet village and which has led so experienced an observer as the Russian-born American writer Maurice Hindus to conclude that the muzhik no longer exists.

The rise of the educational level has been less spectacular among manually employed workers. but the over-all result is nonetheless astonishing. Twenty years ago 82 in 1,000 had completed a seven-year school or had higher education. In 1959 it was 386 in 1,000. For office workers, professional and intellectual workers, etc., the corresponding figures were 498 in 1,000 twenty years ago and 884 in 1,000 at the time of the last census.

In the metallurgical industry more than one-half (535 in 1,000) of the mainly manually employed persons had seven-year school or college education. The educational level is especially high among turners, milling-machine operators, mechanics, electricians, and fitters, of whom between 683 and 628 in 1,000 have a completed seven-year school education or college and university training. Before World War II (in 1939) 292 of 1,000 electricians and fitters had reached this educational level. Twenty years later it was 633, almost two-thirds of the total.

The rise of education among women is illustrated by the figures for the textile industry, where the share of women workers is especially high. In 1939 only 60 in every 1,000 textile workers had completed seven years of school or had a higher education. In 1959 the corresponding figure was 478.

Another field in which progress has been unusually swift is transportation. Soviet railwaymen, especially machinists and locomotive engineers, always had an advanced educational level: 211 per 1,000 in 1939 and 602 per 1,000 twenty years later. The advance was much more rapid among those employed in automobile transportation. At the time of the previous census, 141 in 1,000 drivers had completed seven years of school or had university or college education. The corresponding figure in 1959 was 427. For bus and streetcar conductors it was 626 in 1,000 compared with 75 in 1,000 twenty years earlier.

Among trade and restaurant workers and clerks employed in government procurement, 737 in 1,000 have had seven years of school or university and college training.

The full length of the road which the Soviets have traveled in the field of education can be measured if over-all figures of the 1926 census are included in the comparison. At that time less than 1½ percent of all manually employed workers and peasants had been through a seven-year school and practically none had a higher education. In 1939 it was 4.3 percent, while in 1959 close to 39 percent of all workers and 21 percent of the collective farm peasants had completed a seven-year school or acquired university or college training.

Soviet higher education is often of a different nature and maybe in some respects on a lower level than in the United States. But middle-school education, according to reliable field reports, is more thorough, especially as far as arithmetic and preliminary training in physics and chemistry are concerned.

—Christian Science Monitor

—Americans are aware, at least in some degree, that there is a missile gap in favor of the Russains. But how many of us are aware of the growing educational gap resulting from Russian stress on education, its popularization of science and removal of cost barriers to obtain technical training? It is on this vital front that America stands to be defeated if the present anarchy of U. S. education continues.

TIDAL POWER STATION

MOSCOW — The Soviet Union's first experimental tidal power station will be built in a bay of the Barents Sea on the Kola Peninsula, Tass reported recently. The Soviet news agency said the station will be fully automatic.

—Associated Press

Death In The Subway

The morning after the massacre here on February 8, in which eight persons were killed and hundreds wounded by de Gaulle's police, the Paris edition of the *Herald Tribune* fell cheerfully into the trap laid by Interior Minister Roger Frey, who said: 'It was a deliberate Communist provocation.'

Let's look at the facts. After an endless series of O.A.S. *plastiquages* (including ten blasts the previous night), the C.G.T. (General Labor Federation), the CFTC (Catholic Labor Federation), the French Union of Students and other non-Communist bodies, thereafter joined by the Communist Party and the Independent Socialists, decided to stage an anti-O.A.S. demonstration around the Place de la Bastille. Instead of treating these people as natural allies against the Fascist menace, the government not only prohibited the demonstration, but permitted or encouraged the police to treat the demonstrators with utmost cruelty.

The climax was reached, after numerous brutal incidents, when a crowd fleeing from the police rushed into the Charonne subway station. Here the police, using lead-loaded truncheons, pursued them into the subway. A horrible stampede followed, with policemen blindly lashing out at layers and layers of people who fell upon one another. Those on the bottom layer — at the foot of the subway steps—were mutilated or crushed to death, among the fatalities being three women and a fifteen-year-old youth. I myself saw how the police threw unconscious bodies onto a mass of bleeding humanity writhing on the subway stairs, and then piled on top the heavy iron railings which had been used as missiles in the street battle above.

Today de Gaulle, who had been violently hated by the Right, is now equally hated by the Left and is becoming lamentably isolated throughout the country. It is an isolation greatly welcomed by the Fascists. The police showed that they, or at least many among them, are working hand in glove with the Fascists. De Gaulle, in justification, propounded the insane doctrine that the fight against fascism is a government matter and not the people's business. For de Gaulle to crush the Left on the pretext that Communists are also in it is rank lunacy under the present circumstances, as *Le Monde* hastened to point out. Undeniably, the No. 1 enemy is fascism. Now, with the aid of the police and with government complicity, fascism has brought bloodshed into France from Algeria.

As *Le Monde* says: 'Unable longer to thrive on the rotting Algerian situation, fascism now sorely needs anti-Communist ferment inside France in order to justify itself.' The newspaper adds that in such circumstances it is wholly uncertain that an Algerian cease-fire will reestablish peace on French soil 'where Thursday's massacre created a foretaste of civil war.' Even if half the 30,000 demonstrators on that day were Communists, what happened has, in the popular imagination, identified de Gaulle with the sadistic police performance in the Charonne subway station and with that four-year-old child who was blinded by a Fascist bomb only two days before. Unless de Gaulle succeeds in signing and enforcing peace in Algeria in a very short time, the massacre of February 8 may color his future — and that of France — for months and years ahead.

—By Alexander Werth
In *The Nation*

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G. E. DEVELOPS SUPER-BRIGHT LAMP

A new lamp nearly three times as bright as the sun has been developed by General Electric Large Lamp Department, the company recently announced.

It is a compact, 5000-watt xenon arc lamp, the most efficient yet developed, says GE. Light produced by the new lamp totals 275,000 lumens, or 55 lumens per watt. It is seen as having applications in searchlight and projection equipment for research, national defense, commerce and industry.

In the visible spectrum, the light closely simulates sunlight.

—Electric Light and Power

IRRIGATION NO LONGER A GUESSING GAME

TULSA, Okla.—A Tulsa firm has developed a device to take the farmer's muddy boots and guesswork out of irrigation.

Manufacturer Frank W. Murphy said a moisture meter is buried in the ground. If the soil is too dry, a radio signal notifies the irrigation pumps or canal and the water flow starts. A reverse action occurs when moisture content is good.

Murphy said it takes the human factor out of irrigation and ultimately could mean up to 35 more bushels of corn to an irrigated acre.

—Post-Intelligencer

WHITE - COLLAR AUTOMATION

By Walter Buckingham, Director of The School of Industrial Management, Georgia Institute of Technology.

About 10,000 *electronic computers have been installed in offices in the United States in* 1961. *On the basis of Bureau of Labor Statistics, estimates that, on the average, each computer affects* 140 *jobs,* 1,400,000 *workers were affected last year alone. The BLS estimates that about a fourth of these jobs*—350,000— *will be abolished altogether. The rate of installation of office-automation equipment will probably accelerate. If the sixty-eight companies that are now manufacturing computers in the United States should double their sales this year,* 700,000 additional *clerical jobs will be abolished*

Still more jobs are expected to be eliminated by other types of automation devices. For example, an automatic sales clerk can dispense up to thirty-six varieties of products, accept payments up to $5 and give the customer his exact change. According to Congressional testimony, an 'automatic law clerk' can perform seven man-hours of legal research in a few minutes; within ten minutes of receiving a question involving tax exemption, the machine analyzed 400 laws from fifty states and the District of Columbia, typed all the statutes and case citations, and had begun typing the full text of the material.

Small transistor computers—the size of an office desk—are being manufactured at a price that small businesses can afford: IBM and RCA, as well as many universities and private management-consulting organizations, have computer services for rent. A 'do-it-yourself' computer center is in operation in Los Angeles. Operating like a laundromat, it solves complex problems with a minimum of staff assistance.

IBM has a reading machine that can scan 1,800 words a minute and also automatically operate a teleprinter for long-distance transmission of its messages. A similar electronic scanner already in use by a New Jersey utility company does the work of twenty-four key-punch clerks. A phonetic typewriter is being developed by RCA which, using sound language similar to speedwriting, prints exactly what it hears (the word 'typewriter,' for instance, would be printed 'tipriter').

RCA also has an electronic-systems center in New York that provides daily individual processing of stock-exchange transactions such as brokerage commissions, taxes and customers' balances. The center can also calculate the payroll for a business enterprise, including salaries, fringe benefits and social security taxes.

Automation is moving rapidly into industries in which information-handling or accounting play important roles. In this area, electronics' special contribution to automation has been to extend the range of automatic control and to increase the speed of processing information. The Bank of America, for example, has installed an electronic computer, capable of 237,000 additions and subtractions per minute, that daily services over 90,000 mortgage loans and 190,000 installment loans, at the same time making statistical reports to management. The bank has installed forty machines to service its approximately 600 branches in California alone.

The United States Treasury uses a computer to keep track of the 350 million checks which it issues every year. The machine replaces 450 clerical employees and rents for $900,000 a year ($2,000 for every employee replaced). Sylvania Electric Products, Inc., uses a computer that processes a 26,000-man weekly payroll in twenty-five minutes, calculating regular pay, overtime, absences, late-to-work adjustments, withholding taxes, union dues, social security, bond purchases, pension deductions, etc.

J. Lyons and Company, Ltd., of London, pioneered in the application of computers to commercial operations. Once it took this firm nine minutes to compute the pay of each of its 7,000 employees in 150 shops; now it takes two seconds. United Air Lines uses electronic devices to provide its president with an up-to-date profit-and-loss statement every morning. The C & S Railroad uses a computer to prepare 90,000 quarterly dividend checks in less than an hour. A Midwest trucking firm used a computer to process all the relevant data concerning the desirability of moving its headquarters. The conclusion was a recommendation to move — and $6,000 was saved yearly.

The number of new jobs that must be created every year if full employment is to be reached and maintained includes not only the number of new workers expected to enter the labor force, but also those who will be displaced by automation. The National Planning Association recently calculated that this year the same level of production as in 1961 *can be maintained with* 1.8 *million fewer workers. The U. S. Department of Labor has calculated that in the next ten years,* 26 *million new workers will enter the job market—an average of* 2.6 *million a year. Thus about* 4.4 *million people will be added to the nation's jobless rolls every year if new jobs are not created for them by economic growth. If current trends continue, about a third of these will not even complete high school and hence will be ill fitted for jobs in the coming years of rapid technological advance.*

Those Who Have Most to Lose

Ironically, those who have the most to lose from automation are the least worried—the personnel in the offices of American industry, where automation today is making its greatest strides. Why aren't they worried? Most clerks are women who consider their jobs temporary: typically, the married ones work to supplement the family income until their husbands get a raise, while the unmarried ones are working—and living at home—until they get a proposal of marriage. Relatively few are dependent entirely on their clerical jobs and fewer still plan to spend their lives in offices.

Most statistical studies of the social aspects of office automation have ignored these considerations. Most BLS studies of this kind show few, if any, layoffs. However, typically these studies cover the effects of automation introduced during periods of prosperity and expanding employment. *It seems that* permanent *reductions in the work force due to technological changes are often postponed until a general business downturn permits the layoffs to be blamed on the 'depression' or 'recession.' Then, when recovery occurs, fewer are recalled than were laid off.* Since businessmen are sensitive to the public-relations effects of layoffs, some university research investigators have voiced the suspicion that they have had easier access to data in those firms where the introduction of automation coincided with increased employment.

Some large employers have admitted that they timed layoffs to coincide with periods of recession. One of the nation's top executives was quoted by the New York *Post* financial columnist, Sylvia Porter, as saying: 'I'd rather have our employees work a longer week and pay overtime than add one more man than necessary to the payroll. . . . It's cheaper to pay the extra expense of overtime than to pay the extra expense of a public-relations drive to explain a layoff.'

A changeover to office automation usually takes longer than in the factory. The continuity of office operations cannot be interrupted and the data of the old arrangement usually cannot be transferred directly to the new system. There is no way of stockpiling materials or products in advance and little opportunity to make trial runs. Typically, the changeover must therefore involve several distinct stages during which time at least three separate work forces are needed: one to continue the old system, one to convert records and procedures to the new system, and one to initiate and operate the new system. This may take anywhere from six months to four years. Consequently, automation has been proceeding slowly enough to allow normal turnover to disguise its effects.

Blue-Collar Minority

In the United States today the white-collar work force is larger than the blue-collar one. Former Secretary of Labor James Mitchell said recently, 'In the telephone industry, automation has reached a point where, for all practical purposes, the companies regard themselves as "strikeproof".' The same is true, in varying degrees, in many other different industries.

Both major political parties accept credit for prosperity—and blame the other party for unemployment. The public has concluded, from these arguments, that recessions and unemployment are indeed controllable. The only remaining question would seem to be whether we must always wait until a crisis is upon us to do something, or whether we can develop amelioratives in advance.

It is generally agreed that a great injury will be inflicted on this generation, and on future generations, if nothing is done to halt the relentless growth of the mass of jobless, rootless, disillusioned and frustrated workers displaced by technological changes. Clerical workers should not be forced to match wits with machines, but should be given the opportunity to rise as high above the moron mentality of machinery as their talents permit.

An enormous variety of proposals have been advanced to solve the problem of unemployment and automation. The best hope seems to lie in the recommendations of the House Subcommittee on Unemployment and the Impact of Automation. All four Democrats and two of the three Republicans on the subcommittee recommended that the qualified among the unemployed should be encouraged to further their education, and that the federal government should contribute financially, to improve vocational education. The subcommittee also recommended the migration of technologically displaced workers to other areas, recognizing that it is often cheaper and sounder economically for workers to move to where the jobs are than for factories to move to where the surplus laborers are.

A 'GI Bill of Rights' for the unemployed has already passed the Senate by a 2-to-1 vote and passed the House Education and Labor Committee by a vote of 24-3. This bill is scheduled for House consideration early this year, and is supported by President Kennedy. It provides federally sponsored vocational retraining for about 100,000 workers the first year and 200,000 the next. Since there are several millions unemployed, this is only a drop in the bucket. In the future, as now, most of the burden of mitigating the personal and economic hardships imposed by technological change will fall on private industry and, in a few cases, on labor unions. One can only hope that they will be equal to the challenge.

(Italics ours) —The Nation

EDITORIAL COMMENT:

The preceding article by Walter Buckingham, Director of the School of Industrial Management, Georgia Institute of Technology, is characteristic of educators and others who perceive the problems being created by technological change: they see some of the trends toward ever higher unemployment, but they haven't the faintest idea of what to do about the situation. They are 'hopeful' that someone, other than themselves, will take action to solve the unemployment problem.

The author provided some important statistics and interesting information on technological trends in the 'white-collar' employment field. However, his reference of the problem to business management and labor for a solution, both of whom are spectacularly unsuccessful even as diagnosticians, is somewhat short of a sensible course of action. Further, Mr. Buckingham's moralistic evaluation of the effects of technology on manhours and employment evidences disdain for technology and appreciation for human sweat and toil. Thus, suspicion, distrust and hatred of science and technological change are being fostered at the very heart of this society in its educational institutions. When one recognizes that this civilization is totally dependent upon a continuing extension and refinement of its technology, he will realize that every effort must be made to appreciate and provide an understanding of the social implications of technological change.

The people of this Continent are participants in the greatest social change that has ever occurred in the history of man. This change is sweeping before it a jumble of age-old and contemporary ideas concerning how society should be controlled. The human animal finds himself in a totally new era, which is another building block in his tens of thousands of years of progress. The discovery of fire, development of the tribal community, domestication of plants and animals, and employment of hand tools required thousands of years of time. The application of steam power to perform work occurred just 'yesterday' in terms of our time span of progress. Powered metal working tools have been making a significant contribution to the productive effort of the economy only since the late 1800's when electrical power became available. Since the advent of cheap and abundant electrical power, the technological revolution has swept forward at an accelerating pace. Now, numerically controlled machines and machine groups, operating with programmed magnetic tape, punched tape and punched cards, produce complicated parts and assemblies with a minimum of human attention and effort.

The principle of automatic control is being applied to entire factory operations, ranging from the production of washing machines and refrigerators to refining of petroleum. As this process goes on, industry is able to produce more and more of everything with less and less human toil.

The acceleration of industrial operations is compelling abandonment of old accounting and clerical methods, simply because they are far too slow and cumbersome. For this reason, automation in the maintenance of records and in the auditing of inventories has become mandatory. Likewise, production control and scheduling of production are being integrated with other automatic systems, again as a matter of necessity, to match the tempo of other operations.

The application of automatic systems is being extended to include support industries for major manufacturing operations. These applications take the form of technological accounting systems, communication systems and production control systems. The same trend is taking place in banking and finance. As the present wave of business consolidations, acquisitions and mergers continues, systems applications will also continue. The end result will be a fusion of all significant industrial and service operations of North America into a high-speed control and accounting complex in which there will be little room for human toil, except, perhaps, for sweeping the floor occasionally. The Price System, which was conceived in toil and scarcity, will have had it. The Price System will be unable to support the unemployed and it will not be able to tolerate the resulting abundance.

Retraining Ballyhoo

The ballyhoo about training the technologically disemployed for new jobs on a mass scale is eyewash, pure and simple. First, the available jobs, now and in the future, will call for highly skilled personnel. Training, for example, for a systems analyst in a computer programming operation requires a high level of mathematical training. One does not acquire such training in a few weeks or a few months. Second, the mere fact that an individual has an opportunity for adequate training in no way assures that he has the necessary combination of aptitudes and interests to assimilate the knowledge required to become proficient.

Future demand for personnel will be limited more and more severely to technical fields, and existing jobs will tend to decline in number and require higher skills.

Since we all cannot become technologists and scientists, any more than we all can learn to play a piano well enough to make a living at it, we shall have to implement a social control wherein learning to live without working most of the time will be possible.

Technocracy is just such a social system. As more technology is installed in North American industry, the urgency for a social change to Technocracy will increase.

—Editor

MY TWO CENTS WORTH

I see where we got our man in orbit after all, but for awhile it looked like we might not make it, with so many things going wrong. Anyway, that puts us Americans ahead of the chimpanzees even if we are still way behind the Russians. I guess it's a wonderful thing to zing through space at thousands of miles an hour, but I'm willing to let somebody else do it while I watch it on television, only I wish they would have better television pictures of it than they do. There is too much jibber-jabber and too many pictures of people and not enough pictures of the rocket and such.

I told Uncle Zeke that Mr. Glenn must be a very brave man to go up in a rocket like that and he said, 'I guess so,' but he looked a little disgusted. Then he said it was not half as risky as when his nephew was sent into battle in the Korean War. Joe got killed, but there wasn't any presidents coming around to see his family. Even the governor of the state didn't come around, and the only reporter was one from the local paper who stopped by on his way to see a ball game between our team and the county champions. There was a small picture of him and a nice writeup on the back page, but it was kinda short because they had to give most of the space to a local bank president who had just died.

Mr. Khrushchev says he would like to go in cahoots with America on some space project, and I suppose he means it but you can't never tell. It could be he just wants to learn more of our secrets, like one of my neighbors said, but it seems to me like it would be the other way around and we should jump at the chance. Most of the time I'm not very suspicious, but I've got a suspicion now that the Russians have a project in mind which is so risky they don't want to take blame for it all by themselves, so they are plotting to let the Americans find out about it and hope we will try it out first to see if it will work. In that way, the Americans will get the blame if it doesn't work and it will be our money not theirs that is wasted on it. If it does work, the Russians can say we stole it from them.

Anyway, I'm glad our man made it back home safe this time, but I am sorry for him. His life won't be his own for awhile and he will be mobbed by people wherever he goes, anyway until a new hero comes along.

—Ima Moron

TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in North America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $9.00 which are paid by the member to his local Section. Members wear the chromium and vermilion insignia of Technocracy — the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses, or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every state in the U. S. and all provinces in Canada, and in addition there are members in Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the nearest Technocracy unit.

WHO?

Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to North American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife — so long as you are a patriotic North American — you are welcome in Technocracy.

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THE ONLY ANSWER

The Social Dilemma of North America will be resolved, not through wars, tax juggling, debt creation, reform politics, private enterprise, or more piety, but only through instituting a simple, efficient, and equitable method of distributing abundance to all citizens of the Continent.

Technocracy is that method.

THE NORTHWEST

Technocrat

July '62

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- Chicken Farm Engineering
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- The Day the Dam Broke

No. 208, Vol. XXVI

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TECHNOCRACY INC.
Seattle, Washington

Latin American Revolt

The long-inevitable revolt of the people of Latin America is steadily gaining momentum. The Cuban revolt was just a preliminary explosion of the general eruption that is due to come soon. Of the three backward continents, Asia was the first to 'blow,' which was in accordance with Technocracy's analysis of the situation at the end of World War II; at which time it was also predicted that Africa and Latin America would follow, in that order. Africa already has passed the early stages of its revolt. Latin America is entering its first stages now. The big blowup probably will come much faster than anyone in American propaganda circles is willing to concede at this time.

The factors in Latin America favoring revolt are these: A very high birthrate and a diminishing deathrate; the extreme poverty of the great majority of the population; developing technological self-sufficiency; successful examples of revolutionary accomplishments in other parts of the world. The people of Latin America are beginning to awaken to their potential in the political and economic fields and to become aware of the forces which are holding them down. The example of little Cuba, daring to defy the great Colossus of the North and to defend itself against the counter-revolution of reactionaryism, has stimulated them with courage and hope.

The people of Latin America, as in Asia and Africa, have neither the individual capital nor the opportunity to become successful private enterprisers. Their only hope lies in collective action and endeavor and a general sharing of the proceeds. They are not communist, as such, nor do they seek affiliation with present communist regimes. They would settle for moderate socialism if such were permissible and if it were facilitated for them. The intransigence of the reactionaries is forcing them to pursue a course of revolution and to turn to communist nations for support as the only avenue open to them.

The opposition to social change comes from several sources: The wealthy banking, landlord, and haciendista class; foreign investors; the praetorian military clique; the Church of Rome; and international reactionaryism in the United States. These entrenched elements have openly declared themselves to be the enemies of social change in Latin America as well as everywhere else. By their overt opposition to social change, they encourage it to take a more complete and drastic form than it would otherwise. In the end, the Old Order is faced with extinction; and it has no claim to clemency. It makes the strategic error of equating all social unrest in the status quo with 'communism' and of fighting it as an 'evil' ideology. In the past, the policy of the Big Bribe was usually sufficient to keep the national regimes of secondary nations in line with the interests of the major powers. Now, the U. S. is learning the hard way that *that* policy is no longer effective. The ones we bribe do not have the support of the people.

Our propaganda treats the opposition to President Frondizi in Argentina as 'Peronist' when, actually, it is no more than a protest against the status quo. Former President Peron is no longer a personal power in Argentine politics. What the people want is an improved standard of living. Peron was no communist; he was fascist. But he did create debt and spread more purchasing power among the people (the same principle as we use in the United States), and that was his mistake. All proper tyrants of backward areas are supposed to pay off to the wealthy investors, not to the common people. Our friendly dictator, Stroessner, in Paraguay (for one example) cannot be accused of that mistake.

—Techno Critic

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COVER PICTURE

Official Gray Cars swing into parking area after parading to symbolize the 'Operation Everett' Public Meeting.

All Tech-photos by John Berge

JULY 1962

THE NORTHWEST
Technocrat

THE OWNERSHIP OF PROPERTY

The utilization of the prerogatives of proprietorship for purposes of personal enrichment, social status, and 'power' has been a plague on the human race throughout the history of organized society. Its final abolition will be a great boon to mankind.

THE AMERICAN PEOPLE have been conditioned to regard the ownership of property as an important goal in life and as an essential feature of the American Way of Life. It never occurs to them that ownership of property might be disastrous to them both as individuals and as a society. Rather, they have come to believe that property is a symbol of Freedom in its finest form and that the permission of ownership is the supreme distinction between the Free World and the Slave World. Yet, many of them learn through sad experience that property can be a burden to them as well as an exacting slavemaster. It is time that we make a realistic and unemotional appraisal of ownership and property.

Ownership of property has long been a symbol of prestige as well as of wealth, be it ownership of land, buildings, livestock, slaves, or objects of value. Title to property has long gone hand-in-hand with social position.

Property is also known as tangible assets, as distinct from intangible assets, which represent value but are without value in their own right, such as currency, stocks, bonds, credits, insurance, franchises, permits. All important people in American society feel that they must own a landed estate of some kind, preferably something that poses as a 'ranch.' This is a tradition which has come down to us from colonial times.

Although 'property' now usually refers to the ownership of land and buildings, the original concept of ownership pertained to other things. As far back as socialized man existed, the individual had personal claim on certain objects of use or other significance to him, such as weapons, tools, household equipment, amulets and trophies. One of the earliest recognized forms of property was women. Males acquired possession of females and regarded them as personal property.

According to one theory pertaining to the origin of property rights, the first legally recognized form of property was that of women, claimed and held in ownership by men. From this start, the men then laid claim to the produce of their women and also that of their children. Later, with the advent of agriculture, the concept of land, as private property, emerged.

Now, almost everything that can be identified by paper title is ownable. About the only thing that is not ownable is the air that surrounds the earth. Perhaps this is simply because the atmosphere cannot be 'fenced in' and distributed at a price. However, air in certain forms is ownable and salable; for example, liquid air, compressed air, and purified air; but the basic supply of air is not claimable as property. The same thing can be said of the water of the oceans. As a rule, that which cannot be reduced to salable form escapes the status of property. Also at present, for all practical purposes, the material of the earth at a considerable distance below the surface is ignored as property; although, certain legal titles which give one claim to the surface property presumably extend ownership to the center of the earth as well as to an indefinite height above the earth.

Some 'property' belongs to the people of the

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earth as a whole, primarily the atmosphere and the high seas. Lately, some effort is being made to restrict the 'ownership' of these. Most nations claim ownership of the airspace above their national domains. They also claim the ocean areas adjacent to their land areas. The United States insists on ownership of the seas being limited to three miles from shore. Some nations claim twelve miles out and others claim certain sovereign rights over the seas for as much as 200 miles from their shores. National sovereignty over the airspace is limited by practical considerations to the height at which a nation can destroy 'foreign objects' passing above it. Some superlegalistic minds are even discussing the problems of national and private ownership of the moon and possibly, later, the planets.

Most nations have certain national property which, theoretically, belongs to the people of that nation as a whole. In the United States, the public domain, the national forests, the highways, the military establishment, the navigable waterways, and the migratory game birds are regarded as public property. Then, there are items of property which belong to the people of specific states, counties, and boroughs.

Most of the world's people have never owned any private property of significance. In many places, the ownership of property was restricted to the upper class. The lower class was permitted little or nothing in the way of possessions outside of a few utility items and personal effects; in some places, lower class individuals were permitted to own a small piece of land. Even this ownership was not inviolable; these items were always in danger of being confiscated by their upper class masters. More often than not, the lower classes were wholly or partially the property of the upper class—in the form of slaves, serfs, servants, or tenants.

Hazards of Ownership

The ownership of property has had its own problems and hazards. The greatest complaint of property owners through many centuries has been taxation. It has happened that all governments up-to-date have been in need of revenue; and the major means of obtaining this revenue has been taxation of property. It has been customary for governments to go to the source of evident wealth—the tangible property—for their revenue. Only the more wealthy citizens could afford to own, maintain, and protect property; so it was logical to assume that property was the mother lode of tax revenue.

The unpropertied and the peasants did not escape taxation; in fact, they were usually bled more severely in proportion to their income than were the upper class. They might be afflicted with a head-tax or a levy on their production. Further, the idea of excise taxes and import duties was thought up many centuries ago. In more recent years, we have been able to think up a number of extra ways of extracting revenue.

The tax on property has been a bane and nuisance to property owners of all times and places. In effect, it placed the owners in the position of not fully owning their property but merely renting it

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from the government. Those with political influence could, by one ruse or another, escape the worst penalties of the taxation policies; others could charge it up as a cost item to be covered by the price markup on their wares and services. Over the centuries, the most successful tax evaders have been the dominant religious institutions.

On the other hand, the owners of income property resent even more than taxation the obvious alternative to it as a means of providing revenue to the government; that is, government enterprise. They fear that government enterprise would be unfair competition for themselves; for one thing, it might reveal to what extent they have been gouging the consumers. The big bugaboo in their lives is the possibility that the government might take over business enterprise and operate it as a government enterprise to provide income for the government. This has already happened in Russia, and, to a greater or lesser extent in some other countries. Consequently, big property owners despise Russia and the Soviet system with a maniacal hatred. They cringe at the thought of a similar development elsewhere. (Actually, insofar as economic operations are concerned, the Soviet system is very similar to the American capitalistic system. The principal difference is that, in sovietized countries, the government owns the bulk of income property and, having monopoly control, can operate more efficiently and at a much lower overhead cost. Further, it is not burdened with expensive sales promotion programs. The government can operate on the income that, in America, would accrue as profits to private and corporate enterprise; hence, there is little need for taxation.) Government enterprise is still a Price System technique and is subject to all the basic faults of Price System operations. It is not the solution to the economic problems of this Continent.

Ownership Attitudes

The ownership of property does something to the human personality that is both disturbing and amusing to the onlooker. The proprietor becomes a man apart from those who do not own property. Among other things, he tends to become politically reactionary. He acquires an arrogant and supercilious mien toward the unpropertied 'class.' He takes on a 'hard-headed' business attitude when dealing with others. Property owners tend to think in terms of monetary wealth and the growth of personal prestige and power; and they play with the idea of setting up a hereditary aristocracy bearing their own names. Proprietors have been a devastating plague on all continents for many centuries.

The chief enemies of the proprietors are the wage-workers, the advocates of general social welfare, and the tax assessors. They are against 'socialized medicine,' government spending, and centralized control. They strongly favor anarchic sovereignty for property owners; but they are not above accepting government subsidy when it is available to them. They strongly distrust strangers and the unpropertied.

This extreme of personality is not so strongly developed among those who merely own their own place of residence, a utility car, and a few personal effects. It appears in its most aggravated form among those who own income property—landlords, plantation-type agriculturists, livestock growers, industrialists, and 'developers' of natural resources.

Cruelty of Proprietorship

A brief association with a professional livestock grower, for example, is enough to disillusion one's faith in the 'humanity' of mankind. The livestock grower looks upon his animals merely as ambulatory bank deposits. He has no sensibilities where they are concerned. This is well illustrated at the cattle roundups, long romanticized in song and saga. Here, the cattle are rounded up and 'processed.' This is a very cruel procedure; it includes branding (the burning of the owner's insignia into the hides of the living animals with hot irons), dehorning, castrating the males, notching and tagging the ears, and (sometimes) cutting slits in the dewlaps (the loose skin below the necks). The cattle which have been processed are a bloody, bawling, miserable lot; but they represent only money in the bank to the proud owners. The bullwhip and goad are standard equipment for the cattle raiser.

The attitude of professional proprietors toward their human 'hands' is much the same as that of the livestock raiser toward his stock. The history of inhumanity to man by proprietors is, indeed, sordid. Slavery, conscription of native labor, factory employment, enlisting of cheap farm labor, the recruiting of crews for sailing ships, impressment into mercenary military service—all of these darken the records of proprietorship. To proprietors, human workers are merely cost items; and the treatment or mistreatment of these items is determined on the basis of getting the maximum work out of them at a minimum cost, not by humanitarian considerations. That some of the worst features of 'employment' have been alleviated in most parts of the world is not due to a reformation of character among proprietors; rather, it has resulted primarily from external pressures. Technological progress made it possible for human beings to live better and toil less; after which, it was possible to free slaves, abolish child labor, reduce hours of work, and improve working conditions. These things became legalized, not so much out of pity for the oppressed as an expedient to spread the work thinner and reduce the unemployment rolls.

The utilization of the prerogatives of proprietorship for purposes of personal enrichment, social status, and 'power' has been a plague on the human race throughout the history of organized society. Its final abolition will be a great boon to mankind.

The ownership of property is becoming quite a nuisance. Aside from the high original cost, taxes are increasing, legal restrictions and liabilities are mounting, and the cost of maintenance is becoming prohibitive. Many small business operators and home dwellers have turned to renting property for their use rather than seeking to own it outright. Thereby, they escape the responsibilities of upkeep, taxation, liability, and insurance, as well as the inconvenience of immobility. It's the use of the property rather than the title of ownership that is important to them. The overall higher cost of rental is compensated for by certain conveniences to themselves and by the lack of the worry which attends ownership.

Use Without Ownership

Individuals use transportation facilities such as trains, buses, ships, and airplanes without any need or thought of owning them. Highways are used, but not owned, by individuals. The telephone is used on a fee basis rather than an ownership basis. Automobiles are still privately owned (for the most part) mainly because of the inadequacy of public transportation and the excessive markup on car rental services. Where there is adequate public transportation, there is little need for private use of cars. However, for freedom of mobility at certain desired times, a low-cost rental of cars would be a highly useful adjunct to the public transportation systems.

When we come down to it, we find that it is the use of things that is important to people rather than ownership as such.

If a person has access to a recreational area, such as a national park, a national forest, or a wilderness, and can use and enjoy the facilities therein, the idea of personal ownership of his own recreational cabin and grounds does not concern him. On the other hand, when he seeks to approach a lake, a woods, or a meadow and finds 'Private Property—Keep Out' signs all over the place, he is apt to feel frustrated—and disgusted with private ownership of property.

The 'Right' to Waste

What is most disturbing about private ownership is that it also embraces the right to hold something out of use as well as to use it. This is particularly evident in the case of the automobile, which is held out of use for an average of 23 hours out of 24. As a consequence, the parking problem is on a par with the traffic problem.

[There are two simple ways of determining the approximate amount of time that automobiles in the United States are used: (1) Take the average number of miles that privately-owned cars are driven in a year—10,000, plus or minus—and divide this number by the average driving speed in miles per hour, allowing for slowdowns and stops—about 35 mph; then, divide that result into 8,760, the number of hours in a year. (2) Get the national statistical figures on the amount of gasoline sold for vehicular use, as calculated from the federal revenue from gasoline tax; then, calculate the average gasoline consumption per car by dividing the number of registered automobiles in the nation into that figure. Next, estimate the average mileage per gallon and the average speed of travel. . . . Both procedures indicate that the average use of cars is not more than one hour per day.]

Incidentally, private automobile transportation, when used by only one or two persons in the car, is among the highest cost forms of transportation there are. If your car is two years old and is one of the popular American makes, you can figure that its travel cost has been ten cents per mile or more —allowing for depreciation, insurance, licensing, fuel, oil, grease, minor repairs, parking, and garaging.

Ownership of property by individuals, corporations, and institutions is a serious handicap to an efficient, low-cost operation of the North American

Continent. It prevents optimal development of the Continent and prohibits a simple, coordinated use of its facilities. It tends toward anarchic and incentive 'development' rather than functional use. An example of the latter is suburbia. It presents numerous problems which are incapable of being resolved under the Price System. Even the straightening of a county road requires complicated litigation and delay in the acquisition of a right-of-way.

Living Without Ownership

Technocracy would resolve the problem of ownership by abolishing private ownership of public property. Public property is here defined as that used by two or more people and it also includes all devices which consume extraneous energy or otherwise require outside servicing. Thus, all lands, buildings, vehicles, communication facilities, and powered gadgets would be owned and controlled by the Technate rather than by private owners. Individuals would have the use of these things as required. This will be a great boon to the individual citizen.

The citizen will have the use of the things that pertain to his living requirements, but he will not be responsible for their installation, maintenance, and replacement. He will not own his dwelling, but he will have a high quality abode for himself and family. He will not own a car, but he will have the use of a car whenever he wants one. It is somewhat similar to the present-day telephone service, wherein one has use of the telephone but does not actually own it. The major difference is that he will not have to contribute to the profits of a telephone company in a Technate.

The individual will own his clothing, certain of his household furnishings, personal effects, souvenirs, and such. When he has full use of everything he needs, the citizen will not want to be bothered with problems of private ownership. What is more, he cannot withhold from use anything required by others; for example, he cannot own and withhold from use an estate in the country while spending most of his time in the city or another part of the Continent. One cannot own and keep out of service one or more automobiles, but he will have a suitable type of automobile for his use whenever he wants it.

The ownership of property would be a distinct disadvantage to one living in a Technate, for one would not be able to hire another person to work for him. If he did own any property, its upkeep and service would be his own responsibility. If one does make use of the effort of others, such services must be donated to him gratuitously on the basis of friendship or similar consideration. Who would want to own an estate, even under the Price System, if he were unable to hire servants to maintain and service it?

In Technocracy, public property will be maintained and serviced by functionaries of the Technate, not by the individual user. Cars, for example, will be kept in top running condition, fueled, delivered to the user on request, and picked up after using as a public service. One's dwelling will be provided to him when and where desired and be furnished, maintained and serviced. Housekeeping, as a private chore, will become obsolete. One would no more think of servicing one's own premises in the Technate than one would now when staying in a swank hotel.

The End of Buying and Selling

In the Technate, there would be no incentive for acquiring property. A person will *not* be able to buy and sell for speculative purposes. In fact, he will not be able to sell anything. There is no provision in Technocracy's program for business dealing or exchange between individuals. All exchange, primarily purchase of goods and services by the consumer, will be directly between the individual and the Technate. Gift giving, in terms of purchased merchandise, will be passe; for, there would be no point in giving such a gift to another when each person has adequate income to procure all of one's personal requirements. If one does give something to another, the gift will have significance only if it is something created by the giver—a work of art, for example.

In the Technate, an additional safeguard against irresponsible gift-giving will be instituted. A person will not be permitted to purchase anything that he or she cannot use personally. For example, men may not purchase items used only by women, and vice versa. Further, too many purchases of any one kind of item (that is, in excess of one's probable use of the same) would constitute grounds for official inquiry. Among the things that Technocracy abhors are racketeering and waste.

A feature of life in the Technate will be the absence of a need for saving. The accumulation of purchasing power will be prevented by the design of the Energy Certificate. If one's Energy Certificates are not all used up within a designated period, they will be cancelled out and the whole society will benefit from their non-use. They cannot be held as a liability against future production and services. This will cause no hardship to the citizen; for, new Energy Certificates will be issued to him periodically for life; he will always have an ample supply in his account.

At present, the alternative to ownership of property is rental. The chief disadvantage of that is the demand of the owner for a 'reasonable profit' over costs. Under the Price System, a 'reasonable profit' means all the traffic will bear. This is particularly noticeable in resort areas at the height of the vacation season.

In the Technate, where there will be only public ownership of public property, the individual user will be charged only the *pro rata* energy cost of providing, maintaining, and operating recreation and vacation facilities. Rental of automobiles, special housing, and other things will be on the same basis.

Without the interference of private ownership, there will be a much higher load factor on the equipment of the Continent; hence, more services can be rendered with fewer units. This will greatly reduce the social cost and make a higher standard of living possible.

The people of North America will benefit immeasurably from the elimination of private ownership of public property; they will find greater freedom and convenience in the use of facilities provided by the Technate.

—Wilton Ivie

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1,013 NEW LAWS

If the productivity key favored by the Kennedy Administration to determine a worker's worth were applied to members of the New York legislature, that state's lawmakers would probably have a corner on money.

The 1962 legislative session ran 13 weeks from January 2 through March 31 and, because members usually work a four-day week, this amounts to about 52 days. In those 52 days, the legislature produced 1,013 new laws, or about 20 new laws a day.

We can't help wondering how uneasy New Yorkers would have felt last year had they known their state was short 1,013 laws. If the word had leaked out, who can say there wouldn't have been a mass exodus to Connecticut?

And considering the numerous laws being passed this year in other states — not to mention the production in Washington—the accumulated national shortage must be awesome. In fact, it's astonishing that for nearly 200 years we have somehow escaped anarchy.

—The Wall Street Journal

AFRICAN FOOTWEAR

The rapid development of an Algerian market for rubber footwear in recent years—and its potentials in the years ahead—have been the subject of a recent study conducted by the French Commissariate responsible for the control and development of the economic life of the North African country.

In 1955 Algeria's consumption of 2,800,000 pairs of footwear was covered by imports of 2,450,000 pairs. In 1958 the consumption of the country was estimated at 4,600,000 of which 500,000 were produced locally. There are only two rubber goods factories in Algeria, both in the capital city of Algiers.

Up to now, France has furnished 80 percent of the imports, with Morocco, Germany, Holland, Italy, Poland, Czechoslovakia and Yugoslavia dividing the remaining 20 percent.

The conclusion of the study by the French Commissariate was that the market for rubber footwear in Algeria could be doubled by 1965 from the 1958 figure, to approximately 9 million pairs per year, not including quantities required for re-export to other areas in Africa.

An announcement from Ibadan, Nigeria, reports the completion of a crepe rubber factory by the British Bata Shoe Co., Ltd. Bata, described as the world's largest shoe-makers, not only operates a chain of retail shops in Nigeria but also manufactures shoes, processes rubber, and collects hides and skins in the country.

The opening of the Bata factory comes at the same time that Western Nigeria Development Corp. is expanding its operation in the field of rubber production and processing. It is adding to its facilities a new $400,000 processing factory at its Araromi rubber estate. Tapping began April, 1961, on 423 of the plantation's 12,000 acres.

Production of rubber has increased steadily in both quantity and quality in recent years in Western Nigeria. The region exports over 35,000 long tons a year, and the value of production at current prices is expected to increase by 10 percent over the next five years.

In Addis Ababa, an agreement has been reached between Ethiopia and Czechoslovakia which, among other things, provides for the construction of a Czech plant for the manufacture of rubber and cloth footwear. In the early stages, daily production of 6,000 pairs is envisioned with 400 workers employed.

—Rubber Age

The five completed buildings in the above pictures are situated on only five acres of land but are the facilities for raising 200,000 pullets annually.

CHICKEN FARM ENGINEERING

Not many years ago, raising a flock of 2,000 chickens was considered to be a large and financially hazardous operation. Considerable man-hours and acreage were required to care for a flock of this size. The danger of devastating disease was always present in the old-style operation.

But times have changed in chicken farming, which is shown by developments on the Tastad Pullet Farm located at Marysville, Washington. On this farm an efficient and compact layout has the annual capacity for raising 200,000 pullets for egg laying stock.

One-day-old chicks are received at the Tastad Farm and placed in one of five specially designed buildings equipped with a controlled atmosphere. The buildings range from forty feet to sixty feet in width, and are two hundred feet long. Each building will house about 13,000 chicks. The chicks remain in these special buildings until they are from sixteen to twenty weeks old. They are then delivered to egg producers, ready to start laying.

At no time, until they are crated for delivery, do the chicks ever see the light of day. In the first few weeks, the chicks are conditioned in stages to a routine of night and day by controlling the electric lights and temperature. At the end of their initial growth, the pullets are now ready to lay eggs and are shipped to a waiting customer. The building is then scoured in preparation for the next flock of chicks.

The Tastad Farm contrasts the old and new methods of pullet raising. One part of the farm raises chicks in the old manner, where some 20,000 chicks occupy thirty-five acres of land. The new, more compact method of raising chicks occupies only five acres and quarters 60,000 to 65,000 birds. Thus, three times as many chicks can be raised by the new method on only one-seventh of the land area.

Young chicks huddle under a brooder in specially designed facilities which control atmosphere and other living conditions.

One man operates the modern portion of the farm, and has only occasional assistance, for example, at debeaking, crating and building-cleaning times. Feeding and watering of the pullets is almost entirely automatic.

As with chicken farming, the search for new methods of production for nearly everything the

Part of some 13,000 pullets are captured in this picture. They are about 16 weeks old and are ready to ship to their owners.

people of this Continent need and use is moving steadily ahead. The question now is what to do with a rising productive capacity under the Price System, which requires that things be scarce and that they carry price tags. To date, only Technocracy has addressed itself to this problem and succeeded in developing the answer.

—12247-1

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JAPAN TO CONSTRUCT SUBMARINE CABLE

TOKYO—Construction of a proposed submarine cable network which would link Japan with several Southeast Asian countries is now scheduled to begin in the summer of 1964.

The network, to form part of a future worldwide net, will link Tokyo with Taipei, Manila, Saigon, Bangkok, Singapore, and Djakarta, with an extension to Hong Kong.

It will be 6,035 miles long and will cost a total of $83.3 million.

The Ministry of Posts and Telecommunications of Japan has been working since 1959 on the plan.

The Ministry plans to hold a meeting in Tokyo late this month of the government telecommunications authorities of the countries concerned.

Preliminary discussions have been held and general agreement in principle has been received from those countries.

—Trade and Commerce

MY TWO CENTS WORTH

One of my friends who works at an office was telling me the other day that one of the ladies in the office had a heart attack or something. They called up the hospital which is run by some church and asked them to send an ambulance right away because she was awfully sick. First they wanted to know if the woman had enough money to pay for going to the hospital; but she was too sick for anyone to find out. Then they wanted to know who would guarantee the bill. The people at the office said they would have to get in touch with her relatives to find that out and they told the hospital to send the ambulance quick as the woman was in bad shape. After an hour went by the ambulance still didn't come, so they called the hospital again, but they argued that they couldn't send an ambulance until somebody agreed to pay for it. The woman was unconscious by that time, so one of the men in the office said he would pay for the ambulance. But when it arrived the woman was dead.

It seems to me hospitals are more interested in getting money than they are in taking care of people who are sick. They are always advertising for people to donate money to them because they are sort of a charity and don't make enough money. But they always charge everybody I know of the full amount and, believe me, that's plenty. I don't know anybody who ever got any charity treatment at a hospital, except at the county hospital where they take the people to die who don't have any money. Some of the old people I know are worried sick over the thought they might have a big doctor and hospital bill. Even those with thousands of dollars in the bank are worried for fear it won't be enough for an emergency.

Why can't hospitals be run like the schools? Let everybody go to them when they are sick and let the doctors get paid the same way teachers are paid. Then, if somebody needs to go to the hospital, they can take him in and check his ailment without bothering to check his pocketbook first. I mentioned this idea to an old couple who lives near me and they said it was too much like socialism. But they are living on Social Security, and if that ain't socialism I don't know what is.

— Ima Moron

Some Things To Think About

... Japan, swarming with a population of some 93,000,000 people, which lives in a land area smaller than Montana, finally is moving successfully to control its birthrate by using a combined program of legalized abortion, contraceptives and a widespread, state sponsored public education effort. Today Japan reports among the lowest birthrates of any country in the world, at 16.8 births per thousand people. This is a drop of 1.2 births per thousand from the report last year. Still, Japan's population is increasing at a rate of 1,500,000 per year, which is far more than this impoverished country can tolerate. With only half of its present population, Japanese by the millions would still live in poverty. So Japan has a long way to go in order to bring about a balance of population and resources.

... The physical and social problems of North America, which have been the concern of Technocracy for more than forty years, are slowly being recognized by some of the people of this Continent. It is becoming 'fashionably intellectual' to listen to prominent persons of science discuss problems, even though invariably no answer or course of action is proposed by such persons. This level of awakening is preferable to the almost total sterility of social thought which has maintained during the past twenty years. But it is a long way from the social desire for intelligent action required to get on with social change. Technocracy points out that any American who has something he wishes to say about his own destiny had better start saying it; and he had better get organized with Technocracy so that he can be heard.

... When business, and particularly real estate business, declares fallout shelters ridiculous, they *must* be pointless. Arthur P. Wilcox, president of the National Association of Real Estate Boards, called the fallout shelter program 'ridiculous' and said, according to a recent newspaper report, 'I cannot believe that America can or will ever go underground and burrow like a mole.'

... On the matter of fallout shelters, if America ever burrows in, like a mole, it will have the effect of creating a phony sense of security, and probably would compel the Russians to undertake the same stupid measures. The two great powers might then square off for the 'grand finale' of wars, likely would completely liquidate one another, and undoubtedly would take most, if not all, the human race with them. Some Americans, who ascribe to themselves a 'higher morality' are quite prepared to set about to liquidate the human race, rather than to face social change. The influence of these psychopaths must not be underestimated.

—12247-1

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ALCO, INDIA SIGN $200-MILLION PACT

Alco Products recently announced the signing of a 10-year 'collaboration agreement' with the government of India. Under terms of the pact, Alco will provide technical assistance in establishing production of diesel locomotives and engines in India.

Total value of equipment to be produced during the 10-year period is approximately $200 million. Alco will export about half of this amount from the U. S., according to William F. Lewis, executive vice-president.

He said the agreement is designed to enable India to 'manufacture efficiently and competitively complete diesel-electric locomotives of Alco design and quality.' Also contemplated is the manufacture of Alco-design diesel engines for use in the locomotives or in stationary and marine power.

The Indian government proposes to set up a plant at Varanasi, in Upper Pradesh, capable of producing 250 locomotive units a year. They will range in horsepower from 1,050 to 2,600 and incorporate 6, 12 and 16-cylinder diesel engines. Production may begin by late 1963.

Alco will furnish drawings, specifications and a detailed layout of the factory buildings and shops, machinery and equipment to be used at Varanasi. The Indian locomotive factory will have a 'flow of work' pattern similar to Alco's locomotive assembly plant at Schenectady, N. Y.

Indian personnel will also be trained by Alco under terms of the agreement.

Some 130 Alco diesel-electrics are now in operation on the Indian Railways, and an additional 40 are on order.

—Railway Age

'Speaking of unemployment, the human brain has more than ten billion cells.'—Bert Masterson, Hartdale (N. Y.) Masterson Press.

* * *

'Funny thing about trouble. It always starts out being fun.'—E. M. Remsburg, Vista (Calif.) Press.

Our Propaganda of Annihilation

Our present direction indicates that our very planet is in jeopardy. To survive we must change our direction quickly. In order to do this intelligently we have a great deal of faulty thinking to overcome. Let us examine a few examples of inaccurate concepts.

For more than twenty years Technocracy Inc. has been warning Americans that a crisis involving the complete breakdown of our economic system and possibly a third world war was inevitable unless a social order consonant with our integrated technological setup was instituted on the North American Continent. All through these years Technocracy has pointed out the basic trends which indicate the bungling of our business-finance-political control that is rushing us down the road to oblivion. Of late every news broadcast bears out the correctness of Technocracy's predictions. Yet at this time of crisis, when the deepest understanding and the clearest thinking on the part of all of us are imperative, the largest portion of our population is indifferent and confused.

This confusion may be due in part to the reluctant fear of an even greater change than we have been having; a reluctance which prevents our seeing the intelligent course into a social order which will assure survival and the enrichment of, rather than a threat to, all our lives.

Over two decades ago when Harry Elmer Barnes deplored what he called the 'mental lag of twenty years' behind our technological development, who would have believed that after World War Two, followed by giant technological strides in every direction, we still had not managed to close that gap, while actually some of us have retrogressed to eighteenth century thinking in an attempt to rediscover security? From our efforts to obscure or ignore the facts in the hope that they will just go away, and from our own stubborn looking backward, we are drawing little comfort and no guidance for the future.

For one thing, our mental defenses have been weakened by an educational system which for years has stifled rather than stimulated inquiring minds. Although many of us now recognize the urgent need for a correction of this mistake, we have just witnessed such efforts hampered in Congress by selfish partisan interests. The mediocre subjective trivia will continue to crowd out much needed objective training, especially in the art of thinking. This sloppy preparation for life makes it doubly easy for the individual to deny responsibility to our broadest and most urgent concerns. It encourages the 'let George do it' philosophy that deafens us to what George is incessantly putting into our heads. It has led to the loss of the art of differentiation between the correct and the incorrect. So the air and newspapers are filled with erroneous concepts which are being fed to us in massive predigested portions; like diners living on pills instead of food which requires chewing, we bolt fact, fantasy and dangerous ideas without question or thought. In a country where 'the easy way' is a fetish, this habit is perhaps a natural, but it can lead to our doom! It has already brought us to a national posture which moves in crablike and halting ways that are ridiculous and dangerous. World-shaking developments are following each other with electrifying swiftness, demanding complete understanding and immediate wise decisions. Never has peril sat so malevolently nor so ominously upon our shoulders!

Since it is axiomatic that 'as we think so will we go,' we must realize that oblivion can be reached by the way of lassitude and indifference and incorrect thinking quite as easily as by the route of fear and hate. Our present direction indicates that our very planet is in jeopardy. To survive we must change our direction quickly. In order to do this intelligently we have a great deal of faulty thinking to overcome. Let us examine a few samples of inaccurate concepts.

A good place to start is with our lazy habit of labelling every revolt against oppression all over the world as 'communist-inspired.' To do this of course absolves us in our own minds of any responsibility toward them, be they in Angola or in Birmingham. But it is also an insult to the human mind, for it implies that men everywhere are incapable of recognizing their own oppressions, let alone fighting against them without outside prodding. Further, it hands credit to communism as 'the champion of freedom.' This leads to the assumption that, since we are against communism wherever it raises its head, we must fight in these uprisings in some way, and too often we wind up on the wrong side with some very strange people. It is unbecoming for a people whose own history runs red with revolt to belie its words of understanding to revolting nations with acts which demean their dignity of purpose and motivation. In this wise we have injected into every revolutionary incident in our time, the factor of contest. Anywhere along the line a spark from the resulting friction may threaten world conflagration. By understanding this, we are better able to keep our feet under us and not be swept overboard by our own propaganda.

Further irrational thinking comes from our suicidal snowballing arms race, in which we are told we are 'lagging.' Such a race can find its climax only in a world-annihilating holocaust. The key to this erroneous idea is the word 'lagging,' which when constantly used, foments the illusion of our being in a disastrous position if we are but one bomb behind the other fellow. Yet this assumption is not based on fact for there are now in existence enough A and H bombs to equal 8½ tons of TNT for every man, woman and child on the face of the earth. (It would be interesting in passing, to see what would happen were those 8½ tons in food.)

War and the National Leadership

Recent utterances of some of our leaders have horrified those who heeded them—utterances which revealed the intellectual poverty of those leaders by their too-ready acceptance of the idea of hot war as inevitable. Instead of stressing the necessity for the slower, more difficult but only intelligent approach by which our problems may be 'thought through instead of fought through,' these leaders demonstrate that they have lost sight of the greatest challenge of our times, and have ignored the fact that science has made possible the preservation and enchantment of life as well as its destruction. They hold lives doomed by the millions in a thermonuclear war, as secondary to prestige (always fleeting at best in a political world) and do not explain how much prestige we will maintain when buried under atomic dust. But they prove the failure of the system we are operating by when it gives the impossible choice to Americans, a mole-like existence under a program of 'a bomb shelter for every family' as the only alternative to dying like flies.

Technocracy asks every American why, when for the first time in humanity's long climb out of the primordial ooze to the threshold of the most abundant culture ever envisaged by man; when we are now able to wipe out forever want, crime, ignorance, disease and war, why should anyone want to build another civilization if this one through ignorance is blasted apart? Any individual or group which can envisage a life worth living after thermonuclear war is completely mad. That there are those at the top who do shows how very sick we are!

Stop the Clock?

There is another dangerous area of thought being fostered in the public mind by those who would maintain the 'status quo.' In other words, 'stop the clock' in this changing world. It is, that social change can occur in but one of two directions, the right or the left. This is antiquated Aristotlean thinking, and in this modern age is highly incendiary, for it reduces everything to white or black. Our advancement into science should make this sort of concept impossible, but it is very prevalent and it can destroy us. For one thing, it leads to labelling *any* social advancement as 'alien,' therefore 'socialistic' or 'communistic,' and therefore evil and undesirable. Yet a look at the facts reveals that social change from an entirely different direction is not only clearly indicated but imminent. America has but six percent of the world's population yet over half of the earth's natural resources; and many of these have been wasted through the decades (to the distress of the less fortunate peoples) in the mad effort of our present system to insure profits. To those who think, it is asinine that America should fail to find a way to distribute this abundance equably. To do so would solve our economic dilemma and set a worthy example for the rest of the world. It is interesting to note that in time of war we have not been halted by implications of socialism in our housing, feeding and giving medical care to a large segment of our population, the service men and their families. Why then, do we gag at the thought when we are now in a state of almost constant cold war? Why do we allow ourselves to be so deluded and blinded to our prime interest, which is survival, that we deny ourselves a social order which would assure that survival?

Another fanciful thought is perpetuated when we give all 'the palms' for the greatness of America to the genius, 'know-how' and money of private enterprise. Far from being correct, this is dangerous propaganda because it keeps alive the myth that we cannot possibly survive without it. The fact is that private enterprise, in order to achieve its long-lasting hold on our economy, had to have help from every quarter. It has held science in its thrall for its own purposes. And, supported throughout its history by government doles, subsidies and handouts, bulwarked and defended abroad by force of arms and good American blood, private enterprise has gained and maintained an autocracy in government. Through political maneuvering it has been able to plunder our irreplaceable resources, wasting and destroying what it found unprofitable. By keeping its own predominance ever before a gullible public it has become the real, though unelected, government of our country. The natural outgrowth of this thinking is another myth, that if threatened we must be willing to go to war to defend it.

Factors in Our Success

The fact is that we were able to reach our greatness because of three factors:

1. A God-given richness of natural resources with a favorable climate;
2. A rapidly growing population, of which the proponents of private enterprise are a part, which was willing and eager to work hard to help build; and
3. A system which up to recently when it passed from a handtool-mechanized economy to a rapidly automating economy, was able to keep going and growing, due to scarcity.

In all of this, private enterprise has been but another tool, putting man-power, resources and implements together for the purpose of production. Now the great role of private enterprise is being challenged by the ability of machines to operate without man-power and even thinking-power. This increasing change in its role is proven by its necessity to resort to war, hot or cold, in order to keep the wheels turning. Realizing this will permit us coolly to assess the fact that as man-hours vanish, as they rapidly are vanishing out of the production picture, so must the private enterprise motive of profit vanish under the impact of a machine-produced abundance. This approach to the picture can apply the brakes to our hurtling down the road toward war, for it explodes the fantasy that private enterprise is a 'sacred cow' for which it is right that American lives be readily expendable.

Incentive to war is given by yet another misconception. This is that competition exerted by potential enemies using 'slave labor' is robbing us of our world markets. This is considered such a threat that some of our leaders would like to go to war right now about it. Yet the fact is that our greatest competition comes from products made in American-owned plants on foreign soil, by the cheapest of labor, including sweat shop and child labor. Americans now have billions invested in overseas plants which pour goods into foreign and domestic markets, at the highest net profits to their owners, since the costs have been drastically cut and the high U. S. taxes have been avoided.

Obligation to Understand

It is an obligation for Americans to realize that American private enterprise does not admit to any national or political barriers nor adhere to any lofty standards of conduct where its profits are involved; and that this is the same private enterprise which showed its brand of patriotism at the start of World War II. At that time it refused to produce the tools of war until stupendous profits had been guaranteed by government. Recognizing these facts will immeasurably offset the propaganda of outrage we are subjected to and reduce the fear, fever and hate which can allow us to be led into another war, this time one of annihilation.

Finally, we would do well to observe our own aimlessness as a people, in spite of our constant 'busyness.' We are abysmally ignorant where the welfare of our country is concerned. We have become a nation of sweet conforming nitwits. In a dictatorship this lassitude might be understandable, but it augurs poorly for a so-called democracy in which presumably the people play the dominant role. That this inertia has led to a fatal acceptance of the premise that the government 'is the enemy of the people,' is reflected in the fear of government ownership of power and resources, and of its having anything to do with education. It is heard expressed in such sentiments as 'the government is destroying incentive with high taxes,' 'the government interferes in our lives too much,' and 'the government is taking more and more authority from the people.' At such assertions Americans should alert themselves. For in a democracy *the government is the people!* At such time as the government cannot be trusted with the interests of, by and for the people, the people had better be finding out why!

Americans are in an admitted plight! Without a positive plan for the conduct of our affairs at home or abroad, we are vacillating and unsure. We find ourselves in one untenable position after another all over the world. Laos, Korea, Cuba and Berlin. We are nervous, jumpy and frustrated. We make strange bedfellows who take our money and then kick us out for our efforts and interference. This plight is not going to be flicked away with an impatient turn of the switch. It is paradoxical that with all our modern contrivances, even to the thinking machines, Americans are less aware of their dangers than was the cave man of his when the sabertooth tiger stalked his cave. Whatever else our modern way of life has given us it has not built into us an understanding of the world we live in, nor has it stimulated our mass desire to find the solution to our problems. Americans for the most part are far more interested in 'making a living' than in preserving life itself. And the average American is so physically 'beat' that he has little room in his cranium for any objective thinking. Therefore he sinks into a 'never-never land' of contrived trivia before 'the box in the corner' and allows himself to be lulled out of any concern for where he or his world is going. Once in a while he is fleetingly jolted out of his lethargy by a sputnik or by the shooting getting too close, or by his favorite team failing to bring home the pennant; but, by and large, for the great American spectator (mental age of 12) everything is just another 'great big show' which he is satisfied to watch somnolently. And when will he waken? Maybe never!

Perhaps it is a grim thought that a thousand years hence on digging through several feet of atomic ash this is the way an exploratory team of a more intelligent race may find him; sitting there in a state of perfect preservation, surrounded by his family and the artifacts of his age, TV trays and disposable beer cans, and only a little less oblivious to what is going on than he now is!

Technocracy urges all Americans to rouse themselves while there is yet a little time! Investigate the facts, think, and prepare for intelligent action!

The need for a design for a functional control is indicated!

Such a design is ready and waiting to be applied when Americans demand it for their own survival! Join Technocracy!

—Jeanette DeLeon, M.A.L.

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THE SEEDS OF EDUCATED DISCONTENT

The colleges of the United States have always been reactionary at the top; and, since the war, they have been reactionary all the way down through the student ranks. For nearly two decades now, there has been no educated protest against the status quo in this country. The graduates could almost automatically get good jobs in the institutions of the status quo, and they became narrowly self-centered in their interests. The high cost of living and the burden of mortgage debt induced them to defend and protect the institutions and policies which paid them their salaries. This 'success' stimulated college enrollment and boosted the output capacity of new graduates. Now the demand for college graduates is slackening off and there is no longer a wide selection of choice positions being offered them. Select positions already are reaching the point of saturation in many fields. College graduates have to scrounge for jobs now and often have to accept something lower than they expected. This situation is planting the seeds of social discontent among those who are best trained to express themselves eloquently by the spoken and written word. This discontent has not as yet coalesced in any organized movement nor has it oriented itself in any specific direction, but it is becoming increasingly critical of the status quo. Unfortunately, most of the discontent will bog down in the morass of philosophical liberalism. However, some of it may achieve a breakthrough into the area of technological operations of a social mechanism. Those who make the grade will find that Technocracy has already done the exploratory and pioneer work in that field and, thus, has saved them the trouble of hacking their way through an unknown wilderness. Technocracy has the advantage over a philosophical ism in that it deals with facts, not opinions; hence, its program and conclusions are subject to study and review on the basis of realism and cannot be dismissed as subjective fantasy.

— The Techno-Critic

IMPACT OF TECHNOLOGY ABROAD

More profoundly disturbing to the Old Order, more devastating to the age-old ideas of mankind than any political concept, past or present, is the march of technology around the world. Social change, induced by technology, population pressure and the simple desire of peoples for something better than they have now, is breaking down the Gates of the Old Order. Nothing, short of total annihilation, will stop social change either in North America or abroad.

ALL-WEATHER HIGHWAY PLANNED IN SWAZILAND

Swaziland plans to build an all-weather 112-mile highway which will facilitate external trade and stimulate the country's economic growth.

The International Development Association (IDA) recently extended a development credit equivalent to $2.8 million for the project.

The highway will run from the border of the Republic of South Africa on the west to the Mozambique border on the east.

It will link Swaziland's largest towns, in which trade, industry, and governmental services are concentrated, with the most productive agricultural, forestry, and mineral areas. It will also open new lands to cultivation.

Swaziland has some 1,150 miles of roads, none of which, except for one section, are paved.

A road construction program has been underway since 1958 to improve road standards and to pave the main trunk roads.

The most important of these trunk roads is the 112-mile road which the IDA credit will assist.

It will be a two-lane highway, and will be paved over the part carrying the heaviest traffic—a distance of 70 miles from the South African border; the remainder will be surfaced with gravel.

A high bridge will be built across the Black Umbuluzi River near Nokwane to replace a dangerous causeway which is impassable for long periods during the wet season.

The Public Works Department, assisted by consulting engineers, will execute the project.

Bulk of the construction work will be carried out under contracts awarded on the basis of international competitive bidding.

Work is already underway on some sections, and all of it is scheduled for completion in March, 1964.

Total estimated cost is the equivalent of $4.2 million.

—Foreign Commerce Weekly

CHILE ORDERS STEAM TURBINE GENERATOR

An order for a 100,000-kw steam turbine-generator, the largest ever installed in Chile, was received by International General Electric Co. from Ebasco International Corp., agent for Cia Chilena de Electricidad, Ltda., a utility company associated with American and Foreign Power Co., Inc.

The new powermaker will be the first unit in a new steam power plant to be built at a coastal location still to be determined in the rapidly growing industrial region of Central Chile.

—Power Engineering

JAPAN COMPLETES LARGE BLAST FURNACE

JAPAN—A 1,700-ton blast furnace, claimed to be the largest in the Orient, has just been completed at the Fuji Iron and Steel Co. plant in Muroran on the south coast of Hokkaido. Estimated cost of the furnace is approximately $11.1 million and it is part of a $69.4 million expansion and modernization program at the Fuji mill. Also built under the program were two pure oxygen blow-in type converters, each capable of a daily production of 700 tons and a coke oven with a daily output of 1,150 tons. Fuji's facility-improvement plan calling for the construction of 12 new blast furnaces at the Muroran has now been completed and at the end of 1961 the plant's monthly output of pig iron was about 170,000 tons. Steel ingot production reached approximately 170,000 tons by the end of 1961.

—Foreign Trade, Tokyo

AUSTRALIA TO DEVELOP COAL FIELD

AUSTRALIA—Thiess Bros. of Queensland and the Peabody Coal Company of the United States have formed a joint company to spend 15 million pounds (Canada, $35.1 million) in developing the Kianga-Moura coalfield of Central Queensland. This will include a new 100-mile railway from Kianga to Gladstone, a washing plant, and other facilities to allow production to rise to two million tons a year. Thiess has obtained firm orders from the Japanese steel industry for 3.4 million tons of Moura and Kianga coal over the next seven years—the largest overseas coal order ever received by an Australian company.

—Foreign Trade, Ottawa

JAPAN TO BUILD PLANT IN BRAZIL

BRAZIL—It is reported that the Sony Corporation of Japan, manufacturer of electronic equipment and transistor radios, is making arrangements to open a plant in Brazil.

—Foreign Trade, Ottawa

FACTORIES FOR CUBA

HAVANA (Reuters)—Russia will sell Cuba 20 complete factories for about $294 million, the newspaper Revolucion reported. It said $98 million will be in the form of 12-year credit.

The most important of the factories are two thermoelectric plants, a new steel works and a new oil refinery.

—The Province, Vancouver, B. C.

ENERGY NETWORK SET FOR EASTERN EUROPE

A unified system to tie in and synchronize all power production in the East European bloc seems to be shaping up behind the Iron Curtain, according to reports.

A dispatch from the Warsaw correspondent of the Yugoslav publication 'Borba' states that the system is being established with a headquarters in Prague. The correspondent notes that power lines already link the eastern countries.

—Journal of Commerce

JULY LAUNCHING SET FOR WORLD'S LARGEST TANKER

TOKYO—The world's largest tanker and the greatest cargo carrying ship ever built will be launched at the former Imperial Navy Dockyard at Sasebo, now operated by the Sasebo Heavy Industries Co.

The vessel is the first of two 130,050 deadweight ton vessels ordered by Idemitsu Kosan, a leading Japanese oil company.

The largest tankers now in service are the 107,000-ton Universe Daphne and the 106,000-ton Universe Apollo.

The new giant will be 955 feet long with a gross tonnage of 73,000, second only to the liners Queen Mary and Queen Elizabeth. Her beam will be 141 feet, far greater than any other commercial liner or freighter ever built.

—Marine Digest

TRACTOR PLANT IN PAKISTAN

PAKISTAN—A plant is to be erected at Wah, West Pakistan, by a German firm to produce 1,500 28-horsepower tractors per year. The plant, a joint venture with a Pakistani firm, is to be in production before the end of 1962.

—Foreign Trade, Ottawa

NEW ALUMINUM SMELTER OPERATION IN NORWAY

Norway's largest aluminum producer, the state-owned A/S Ardal & Sunndal Verk, has recently started operating a new smelter at Ardal, West Norway. By spring the smelter will be in full operation with an annual capacity of about 35,000 tons. This will bring the firm's total capacity to approximately 150,000 tons per year, 100,000 tons at Ardal and 50,000 tons at Sunndalsora, West Norway. Further plans include expansion of the smelter at Sunndalsora by 50,000 tons and the building of a new smelter somewhere in western or southern Norway with a capacity of 100,000 tons per year. These new facilities would bring output to about 300,000 tons a year.

—Foreign Trade, Ottawa

JAPANESE TRANSFORMERS FOR LOS ANGELES

Hitachi, Ltd., has won a bid to supply two three-phase 160,000-kva transformers to the Department of Water and Power of the City of Los Angeles. Having a primary voltage of 220,000 and a secondary voltage of 36,000, the transformers will be the largest of their kind ever exported from Japan. Price, about $1 million.

—Power Engineering

INDIAN PROGRESS REPORT

Goodyear's new tire manufacturing plant at Ballabgarh, 21 miles from Delhi, India, has been formally inaugurated. Built in the record time of 14 months from ground breaking in June, 1960, to the production of the first tire on August 6, 1961, the plant has an initial capacity of 750 car and truck tires a day. A team of 13 labor trainers from Goodyear's plants is now at the new installation to build up a skilled work force. When production stabilizes, the plant is expected to provide employment for 450 skilled workers. The new plant is the 59th of Goodyear's manufacturing units.

—Rubber Age

WEST GERMAN STEEL FIRM SUPPLIES SOVIET PIPELINE

The West German steel firm of Mannesman, A.G. confirmed it had contracted to supply Russia with 180,000 tons of large diameter pipeline for transporting natural gas.

The company spokesman said the contract was signed 'some time ago' and Russian pig iron which is to be used various plants in West Germany.

The contract will take several months to complete and in the manufacture of the pipe was already arriving at prices are based on those currently ruling. The spokesman declined to disclose any other details of the deal with Russia.

—Journal of Commerce

CYANAMID PLANS NEW PLANT IN INDIA

Cyanamid International of America plans to build an insecticide plant at Bulsar, 150 miles from Bombay.

Costing 10,000,000 rupees (almost $2,100,000), the plant will manufacture malathion, a Cyanamid-developed insecticide. Lederle Laboratories (India) Ltd., will operate the plant, which will initially make 1,000 tons of malathion annually.

Since 1946 Cyanamid International has invested 30,000,000 rupees in India and hopes to invest more.

—Christian Science Monitor

INDONESIA TO GET 100,000-TON STEEL MILL

Russia will build a $100 million steel mill in Indonesia to turn out 100,000 ingot tons annually. More than 100 Indonesians are going to Russia for training and about 250 Russians will help build the plant. Russia also had its hand in an aluminum plant to be built in Indonesia and an iron ore prospecting venture there.

—Steel

MAJOR RAILROAD CONSTRUCTION IN BRAZIL

BRAZIL—National Department of Railroads, Rio de Janeiro, has announced plans for the expenditure of more than $56,000,000 on railroad projects. Major project will be the Passo Fundo-Mussum branch in the state of Rio Grande, which includes some 30 tunnels.

—Railway Age

CONTINENTAL TRENDS IN TECHNOLOGY

FREIGHT WEIGHED BY COMPUTER

A new method of weighing freight by an electronic computer may be the biggest money saver that has come to American railroads since the diesel locomotive.

The device, approved by the Interstate Commerce Commission and the Association of American Railroads, can weigh individual cars in a coupled train moving over it at a speed up to seven miles an hour.

Its designer, International Railroads Weighing Corporation of Northfield, Ill., says it can save more in operating costs alone than the estimated combined 1961 profit of all the nation's railroads, about $350,000,000.

The computer records and prints on a tape in less than one second the weight of any car passing over a 12.5-foot scale. The company says that in five years of testing the scale was 91 percent more accurate than weights shown on waybills from throughout the country.

Weighing systems now in use require that each car be uncoupled on a scale and not in motion.

—Christian Science Monitor

MEXICO PLANS DAM

MEXICO CITY—The 1962 development plan for southeastern Mexico includes a hydroelectric plant, Mal Paso Dam, roads, land improvement, and drainage works.

—Seattle Times

LARGE BLAST FURNACE WILL BE BUILT BY ARMCO

The largest blast furnace in this country will be built by Armco Steel Corp. at Ashland, Kentucky. At the same location Armco is installing two 140-ton basic oxygen vessels. These will be able to make 1.4 million ingot tons a year.

Armco officials told the Iron Age that the hearth diameter of the new blast furnace will be 30 feet 6 inches. This makes it the biggest in this country and one of the biggest in the world.

The Ashland blast furnace will be installed by A. G. Mckee Co., Cleveland. It will be designed for top pressure and a 2000-degree blast temperature. Plans call for an automated stockhouse.

The basic oxygen vessels at Ashland will be built by Kaiser Engineers. They will be of the L.D. type and are due for completion by late 1963. Armco's move to the basic oxygen process is the fourth in recent months.

—Iron Age

Tampa Electric Co., Tampa, Fla., is using a G.E. Automatic Dispatching System to control eight of its largest turbine-generators in its 1700-square-miles distribution area on the west coast of Florida. Cost of the installed system will be close to $100,000.

—Power Engineering

AIR TRAVELERS SOON MAY PHONE IN FLIGHT TO ANYWHERE IN U. S.

WASHINGTON—Airline passengers soon may be able to pick up a telephone in flight and call anywhere on the ground in the U. S.

The Federal Communications Commission proposed rules for a nationwide public telephone service that would connect aircraft and the nation's present ground telephone system by radio. The agency invited comments on the proposal, thereafter the FCC probably will set out final rules for the new service.

The FCC's proposal is based on a petition filed in January by American Telephone & Telegraph Co. for permission to operate the service on certain radio bands. The FCC since 1957 has authorized AT&T to operate experimental ground stations in Chicago, Detroit, Pittsburgh, Washington and New York. Now AT&T believes the results of the experiments warrant putting the system on a regular basis.

The agency said AT&T plans to set up a series of ground stations about 200 miles apart across the country. The system would be designed to provide telephone service with aircraft flying at an altitude of 5,000 feet or more; most modern aircraft normally cruise at much higher altitudes. Under AT&T's plan, the FCC said, telephone service for aircraft flying lower than 5,000 feet would be limited to ground telephones in 'the vicinity of major air terminals or along chief air routes.'

In general, the FCC added, it will be up to the airplane owners to provide the airborne equipment. Private-plane owners would be billed to their home phones; an airline passenger would be billed either by credit card or to his home or business number, or he could call collect.

—The Wall Street Journal

AUTOMATIC NAVIGATOR DEVELOPED

A prototype automatic course computer and steering system is scheduled for delivery to the Maritime Administration in late June. The system, developed by United Aircraft Corporation's Norden division under a Marad contract, will be scaled for evaluation aboard a modern C4-class Mariner ship.

The system is a new approach in ship navigation concepts. It is an outgrowth of earlier work Norden has done for the Maritime Administration in ship automation studies and design of a navigational system.

The new system, of minimum size and weight, can be applied to new or existing ships. It differs from other navigational computers now in use in that it is not only capable of dead reckoning but also can be utilized to estimate present position.

Designed mostly for open sea navigation, the new system computes the bearing between one point and another up to 1,000 miles away. The destination position, in terms of latitude and longitude, is preset into the computer. The system then takes over steering control. The steering system, centering around automatic pilot electronics, receives the command heading, and maintains the ship on its course to the preset destination. Computer readouts permit continuous monitoring, and the only navigational personnel requirements are for occasional monitoring and position fixing.

The new system presents a constant estimate of position, how far the ship must go to reach its destination, and how long it will take to get there. Advantages also include the ability to make hull and draft corrections, and a built-in capability of correcting for gyro error.

The course computer and steering system will be installed in the ship's wheelhouse. All pertinent data and controls are arrayed in an orderly manner on a panel measuring only 18 by 10 inches. The computer is only 15 inches deep.

—Marine Engineering Log

ATOMIC GARDENING

Oak Ridge Atom Industries, Inc., is making available to the general public the first safe peaceful use of Atomic Energy.

Imagine a single tomato plant which produced 120 tomatoes; a stalk of corn with eight ears; a head of lettuce 24 inches in diameter; a rosebush eight feet tall! All these things have already been accomplished by treating healthy seeds with controlled atomic energy.

Science can now speed up Nature's normal process of change 2000 to 3000 times with Atomic Energized Seeds, Plants and Bulbs.

The scientists of Oak Ridge Atom Industries are now permitting the general public to take part in this gigantic experiment in an attempt to produce changes in plants which will better fit the needs of the modern world.

—Business Digest

DO YOU KNOW THAT . . .

Computers will speed automation in the building field? There is a growing trend toward full building automation by computer-directed control systems now appearing in the field. According to John E. Haines, vice-president of the Minneapolis-Honeywell Regulator Company, systems for control of air-conditioning, security, fire detection, lighting and machinery, dirt removal, and other building requirements are already in wide use. The next step — that of closing the building automation loop—will be provided by computers that read data from a building's mechanical equipment, analyze it, then make needed adjustments and corrections. Another automatic trend is to handle a number of buildings from one central point — Harvard University, for instance, has just installed a control system that links 76 of its campus buildings.

—Civil Engineering

Federal Power Commission has reported that electric utilities produced 791,975,193,000 kwh in 1961, an increase of 5.1 percent over 1960's previous highs. Fuel-burning plants generated 80.8 percent and hydroelectric plants 19.2 percent of the total hours generated.

Industrial production of kilowatt-hours was 86,555,087,000, 1.9 percent below 1960's record high. Combined utility and industrial production was 878,530,280,000 kwh, 4.4 percent above 1960.

—Power Engineering

UNDERGROUND RIVER SEALED TO GET AT POTASH ORE

CHICAGO—International Minerals & Chemical Corp. said it has sealed off an underground river in Saskatchewan, Canada, enabling it to tap a large deposit of high-grade potash ore.

The site of the ore is about half a mile underground near Esterhazy, Saskatchewan. The company's subsidiary, International Minerals & Chemical Corp. (Canada), Ltd., has been attempting to sink a mine shaft to the deposit for more than five years.

Sealing off the Souris River by using chemical sealants removes the last of several obstacles and clears the way for reaching the potash ore a company spokesman said.

The company said a potash mill located near the site is scheduled to go into operation Sept. 1 and will produce the chemical, which is a major ingredient in commercial fertilizer, at a rate of one million tons a year. International Minerals expects the plant to reach full capacity of 1.2 million tons a year by early 1963. Total cost of the project is estimated at $40 million.

Available supplies of potash at the Saskatchewan deposit have been estimated at about five billion tons.

—The Wall Street Journal

NEW DEVICE ASSISTS AIRPORT RADAR

Developed by the Computer Measurements division of Pacific Industries, a new electronic counter-timer device is of such precision it can make frequency and timing measurements of things occurring at speeds approaching that of a beam of light, and in effect split a second into 100,000,000 slices.

The second-slices if used as part of an airport radar enable the operator to tell the exact position of an approaching plane with a margin of error of less than four feet in a distance of ten miles.

—Business Digest

SUN RISES, SETS, IN TEST CHAMBER

A room-size box in which a make-believe sun will rise and set and an occasional cloudburst will occur is being built at Duarte, California, by Minneapolis-Honeywell to aid scientists in the study of insects. The box, a test chamber designed for Purdue University's Department of Entomology, will produce temperature, humidity, rainfall and solar conditions found in the natural habitat of the insects from nearly any area of the world.

The unique chamber will enable entomologists for the first time to simulate conditions of insect environment simultaneously with complete control. Breeding insects that are friendly to man, and learning more about the life habits of harmful insects are but two of the many uses for the unique environmental chamber.

Temperatures in the chamber will range from 35 degrees Fahrenheit to 115 degrees Fahrenheit. Relative humidity range will be 15 to 95 percent over the entire temperature range. Solar illumination, provided by an overhead bank of fluorescent and incandescent lights, will produce ultraviolet and infrared rays and simulate various conditions — bright sun, hazy sun, cloudy skies, twilight and complete night.

—Pacific Factory

DEVELOPING SOCIAL PROBLEMS

$1,300,000 HOSPITAL BUILDING TO BE CLOSED

MEDICAL LAKE, Spokane County, Wash.—Eastern State Hospital is to abandon use of a three-story maximum-security building, built in 1955 at a cost of $1,300,000, Dr. Garrett Haynes, Olympia, director of state institutions, has told the Legislative Budget Committee.

Dr. Harris F. Bunnell, superintendent at Eastern, said the building will be closed within a few weeks and not used at all, 'at least temporarily, until we decide whether we can do anything with it.'

He and Dr. Haynes said it would be difficult to convert the building to any other use.

Dr. Bunnell said the kitchen facilities are inadequate, there are toilets but no other water sources in the rooms, and the building is not suited to the type of therapy practiced in mental institutions.

The director said construction of a hospital at the state penitentiary has eliminated the need to take mentally ill persons to Eastern State Hospital from the prison.

Dr. Haynes said 150 men now in the building will be moved to other hospital facilities.

The penitentiary will emphasize increasing the staff and an expanded rehabilitation program during the next biennium, members of the committee were told at Walla Walla.

The prison is now in the final stages of a $6,000,000 building program.

—Seattle Times

—Just another example of Price System waste and bungling.

TAXPAYER NUMBERING O.K'd

The Internal Revenue Service got a green light from the House Appropriations Committee to deal with each taxpayer by number—instead of by name.

The committee asked Congress to put up $5,000,000 to pay for issuance of identification numbers to all taxpayers to combat tax cheating.

The numbers—along with other information about each taxpayer's income—will be fed into high-speed computing machines to check on the honesty of tax returns.

—Seattle Times

DOWNFALL OF FALLOUT: BUYERS HAVE NON-NUCLEAR INTEREST IN SHELTERS

OAKLAND, Calif.—Fallout shelters sold for 'falldown' prices recently in East Oakland.

The seller, Mario De Gennaro of nearby Hayward, admitted grumbly that public apathy and get-rich-quick operators led to the downfall of his $54,000 operation.

Buyers of the nine shelters—some incomplete—were not all worried about a nuclear attack.

'It'll make a darn good dark room,' Robert Hambley, a teacher, said of his $1,050 purchase.

Oliver De Silva, a contractor, bought a $650 demonstration model with a clear plastic side and furnishings—as a potential mountain cabin.

—Associated Press

N. Y. PUERTO RICANS UP 149% IN DECADE

NEW YORK—New York's Puerto Rican population increased 149 percent between 1950 and 1960, the Community Council of Greater New York reports.

The Council report said Federal census figures for 1960 showed a Puerto Rican population here of 612,574, about 8 percent of the city's population of nearly eight million. In 1950, the percentage was 3.1 percent.

—The Washington Post

DOPE BIRTHRIGHT

NEW YORK — Bellevue Hospital has treated more than 100 cases of drug addiction in newborn babies in the past two years, it was announced. The babies were born to mothers who were addicted.

—United Press International

VEHICLES CLOG HIGHWAYS

There are more cars and more drivers on the road than ever before.

Passenger car registration in the U. S. in 1961 increased by 1.8 million to 63.5 million and, in addition, there were 12.5 million trucks and buses on the nation's highways. About 58 billion gallons of gasoline were required to keep these vehicles rolling. There were 90 million registered drivers—a sharp increase over 64 million registered a decade ago. Estimates are from the Automobile Manufacturers' Association.

—Civil Engineering

BUSINESS CASUALTIES CLIMBING

Liabilities of failing companies in January rose to $111.8 million, up from $35.5 million in December. Most failures occurred in wholesale and retail trades.

For all of 1961, total liabilities of failing companies exceeded $1 billion, an all-time record. This was 16 percent higher than the 1960 level. While the biggest jump—48 percent—was scored in wholesale trades, mining and manufacturing failures also rose, by 12 percent. Total liabilities in this latter category came to $325 million.

The total number of failures rose in 1961 to 17,075, up from 15,445 in 1960. Of this number, some 2800 were mining and manufacturing.

—Iron Age

SKIPPERS

NEW YORK—Tracers Co. of America predicts more Americans will be reported 'missing' this year than in any previous year. The company, which specializes in finding them, says easy credit is the reason. General Manager Ed Goldfader said: 'When all those easy monthly payments reach a certain point, the man of the house takes off.'

—United Press International

HOME FORECLOSURES REACH A PEAK

Foreclosures on homes and small businesses have reached the highest level in 22 years, it was disclosed recently. The spurt may prompt tighter credit-checking of home buyers by the Federal Housing Administration.

A total of 73,074 householders and businessmen lost their property by foreclosure in 1961, the Federal Home Loan Bank reported. This was an increase of 42 percent from the previous year and almost matched the 75,556 recorded in 1940.

The FHA finding itself forced to take possession of an increasing number of dwellings, has launched an inquiry. An official said there are indications of "very very inadequate" credit checks.

—Detroit Free Press

'VAST MARKET': POOR CALLED KEY TO ECONOMY

WASHINGTON—Greater buying power for this nation's poor and deprived could boost the United States economy far more than development of export trade, an economics group said recently.

The Conference on Economic Progress reported two-fifths of the population lives in poverty or deprivation — a vast, underdeveloped market within this country.

The report was prepared by a team led by Leon H. Keyserling, chairman of the President's Council of Economic Advisers in the Truman administration. The conference is a private, bipartisan group of labor leaders and business and professional men, many of whom are identified with liberal political causes.

The report said that in 1960 some 38,000,000 Americans lived in poverty, which it defined as annual income of $2,000 or less for an individual and $4,000 or less for the head of a family. An additional 39,000,000 were found to be at deprivation levels of income, defined as individuals with incomes between $2,000 and $3,000 and heads of families with incomes between $4,000 and $6,000.

The report proposed a seven-point program which it said could cut the poverty classification 80 percent by 1965 and virtually eliminate it by 1970.

In the process, the report said, the 1961 level of consumption of goods and services would be increased by $100 billion by 1965 and by $220 billion by 1970.

The suggestions included an increase of $16.5 billion in the federal budget by 1965 with expenditures for education, housing and community development quadrupled and those for health service and research increased 250 percent; increased social-security payments; reduction of income taxes; liberalization of credit; a special attack on farm poverty; wage increases consistent with reasonable price stability.

—Associated Press

—All worthwhile social objectives are implied in one big objective of Technocracy, which is to give every human being adequate economic security, from birth till death.

* * *

'Ulcers aren't caused by what you eat, but by what's eating you.'—Jack Hester, Charlestown (Ind.) Courier.

SAVINGS BONDS SALES

WASHINGTON—Sales of new Series E and H savings bonds fell $52 million short of redemptions in April, the biggest such gap in 19 months.

The Treasury said sales of new Series E and H bonds totaled $349 million in April, a bit more than the $348 million sold a year earlier. However, redemptions of outstanding E and H bonds in April rose to $401 million, topping the year-before level by 8 percent.

The resulting $52 million excess of redemption payments over sales receipts compared with a $22 million gap in March and was the biggest since the $52 million gap in September, 1960.

In six months of last year, sales of new savings bonds exceeded monthly redemptions. This year, however, officials have conceded that savings bonds face heavier competition from banks and savings and loan associations, which have raised their payment rates to savers. These rates in many areas are well above the 3¾ percent interest rate offered on savings bonds held to maturity.

Bond salesmen are beginning a big May-June promotional campaign, which Treasury officials hope will lift sales. The campaign is linked closely to the U. S. space exploration program, with promotional literature telling customers their dollars will 'help insure our leadership in the race for space.' So far, however, the Treasury has been cool to proposals from some Congressmen for a brand new series of securities specifically labeled 'space bonds.'

There were $44.8 billion of Series E and H bonds outstanding at the end of April, up $52 million from the month earlier total. The increase was due entirely to interest accrued during the month on outstanding Series E bonds, which pay interest only when cashed in. Series H bonds pay interest in twice-yearly checks.

—Wall Street Journal

LIFE INSURANCE SOON TO REACH TRILLION MARK

Life insurance in the United States soon will be a trillion-dollar business, Davis W. Gregg, president of the American College of Life Underwriters, said here recently.

Gregg, from the 'home campus' of his college at Bryn Mawr, Pr., supervises five-year courses in life insurance now being given to 17,000 students at universities and colleges throughout the United States. He was a speaker at the Pacific Northwest Sales Congress at the Olympic Hotel.

At the present rate of growth, Gregg said, policies in force in this country will reach the $1,000,000,000,000 mark by 1967.

A fact not generally realized, Gregg said, is that 60 percent of the money paid out by insurance companies today goes to the persons taking out the policies, rather than to survivors and other beneficiaries.

This is due to two trends—the increasing life span and the growth of the 'permanent insurance' concept, under which the proceeds of policies either are collected by the holder or converted into an annuity, Gregg explained.

The meeting at the Olympic Hotel brought together nearly 1,000 life underwriters from Western Washington. The session here followed similar one-day meetings in Spokane and Portland, Oregon.

—Seattle Times

THE DAY THE DAM BROKE

THE CIRCUMSTANCES leading up to events of widely different magnitudes nevertheless often show great similarity. So it is that a comparison can be drawn between the Johnstown, Pennsylvania, Flood, which took place before the turn of the Twentieth Century, and the general circumstances today involving the entire North American Continent. The predisposing conditions attendant to the Johnstown Flood should never have developed. Likewise, those conditions and problems which bear down on this civilization today should never have reached their present proportions. The Johnstown Flood, as a historical fact, is an interesting study and an object lesson in how not to treat physical problems.

The Johnstown Flood, occurring on May 31, 1889, ranks high on the list of social disasters created by human stupidity. An estimated 2,200 individuals died in this community of 30,000 people in a matter of minutes simply because the required technical knowledge was not applied to the correction of a serious defect in a dam approximately sixteen miles upstream from Johnstown.

The dam formed a reservoir called Lake Conemaugh, and was built in 1852 to supply water to the Pennsylvania Canal, which was abandoned a few years later when the Pennsylvania Railroad pushed through from Philadelphia to Pittsburgh. Four hundred feet long and constructed largely of clay and shale, the dam was the largest earthwork structure of its kind in the world.

For a number of years prior to the flood, the dam was under the control of wealthy businessmen, among whom were represented the Carnegies, Fricks and Mellons. Lake Conemaugh, since its abandonment as a water reservoir, had become a private fishing and hunting reserve for the pleasure of this very select clientele.

It was evident that time was taking a toll on the dam holding back Lake Conemaugh when in 1862 a rock culvert at the base of the dam collapsed. A makeshift 'repair' of the culvert was undertaken with rock, straw and hemlock branches. Five water discharge pipes, which were embedded in the culvert and were formerly used to release water from the reservoir into the Pennsylvania Canal, became clogged with debris from the so-called repairs. The importance of the discharge pipes lay in the fact that they could have been opened like a safety valve to release hydrostatic pressure generated by the weight of water against the dam, if they were not choked with debris.

The Cambria Iron Co., which practically owned Johnstown, sent an engineer to inspect the dam, upon hearing of the collapsed culvert and the nature of the repairs. An inspection of the dam revealed the clogged discharge pipes and the need for bolstering the dam structure. Repairs were recommended and assistance was offered to the fishing and hunting club, both of which were brushed aside.

The dam held through several floods but broke wide open in the flood of 1889. It was calculated that thirty-six minutes would have been required for a volume of water equal to that in the flood to pass over Niagara Falls at the same depth and velocity of the Niagara River. An estimated twenty million tons of water, carrying ninety thousand cubic yards of earth and stone, descended upon Johnstown.

Johnstown was hit hard enough by the initial onslaught of the flood; but the town was hit even harder a second time when a heavily constructed archway-type bridge at the foot of town, four hundred feet long and fifty feet high, acted as a dam. The flood waters, loaded with debris, hit this bridge and plugged the archways. The water and mud quickly backed up over the town. Many hundreds of individuals who were congratulating themselves on escaping from the flood suddenly were drowned by the backwash. Johnstown was buried under five feet of silt and wreckage.

Available facts indicate that even after it was evident the dam was going to burst there was adequate time for Johnstown to be evacuated, which would have avoided the tragic loss of life; but the residents of the town failed to act. From beginning to end, this tragedy was directly chargeable to incompetence, inertia and bullheadedness. The survivors learned the hard way about floods.

An examination of the social situation on this Continent indicates that a 'reservoir' of physical, social and economic problems has developed which is exerting increasing pressure on Price System resistance to social change. Here are some of the problems we are saddled with:

A scarcity economy which is not designed to distribute the abundance that technological application to production of goods and services is forcing upon this Continent;

A public and private debt structure so all-encompassing that every last citizen of the Continent is irretrievably trapped by it under the Price System;

A technological displacement of manhours which is reaching into every field of employment to amplify Price System insecurity;

An incredible wastage of natural resources which, if it continues, can result in destruction of this entire civilization;

A society so thoroughly disorganized that nearly all the social problems known to man—crime, racial conflicts, insanity, juvenile delinquency, etc.—have surpassed anything the world has seen up to this time;

A rapidly declining rate of physical progress directly attributable to a total lack of social purpose, which will find this Continent no better than second best, if the present trend continues;

An all-time low of morale and esprit de corps among the people of this Continent in which suspicion, hatred, factionalism and individual interest are being promoted to the detriment of the general welfare;

A totally incompetent leadership which gives no hint that it is even vaguely aware of its inability to organize and direct the technological equipment of North America in the transitional phase of our present social change.

Any one of the foregoing problems is sufficiently serious to produce an internal crisis. But, from all indications, this civilization probably will be hit by the combined effects of all of them. Under these circumstances, when these problems make themselves felt it will seem like 'the day the dam broke.'

There isn't much that can be done to bolster the Price System 'dam' against the pressure that is being exerted by a multitude of problems, even if bolstering were desirable: the whole edifice is crumbling. It is only a matter of time before the political and economic structure of the Price System is swept away completely by the force of technologically generated social change.

Like those in Johnstown of 1889, the citizens of this Continent are far from well informed about the problems bearing down upon them. For example, they have been kidded into thinking that the depression conditions of the 'dirty thirties' will never come back, when in fact the Roosevelt Administration merely performed 'temporary repairs' on the Price System. The years since the beginning of World War II have produced a succession of huge spending programs to create employment and to support business enterprise, which, though criminally wasteful, have kept the Price System running until now. But all of the old problems are coming back—this time with a vengeance.

Technocracy was first to recognize the correct nature of the problem as being technological, and to solve the problem with a technological approach. The first public statements made by Technocracy are today as accurate as the hour they were published. From the New York Times on down, the very publications which attempted to ridicule Technocracy for its technological analysis admit in print day after day, through reports and special features, that technology is bringing the greatest revolution of history to this Continent. Of course, these publications do not tell the whole story of the meaning of technological change, and they give no credit to Technocracy for being first by far to point out that the installation of technology would eliminate manhours and employment opportunities.

So, after years of running away, we are being overtaken by the problem. The overall problem is impersonal: it makes no difference what we think about it; whether we are white, brown, black or yellow; Protestant, Roman Catholic, Jew or atheist; republican, democrat, fascist, or communist; or whether we are a billionaire, millionaire, or pauper. Technology doesn't give a damn about such things. Technology has put all of us in the same fix.

The simple alternative to annihilation in a do-it-yourself project by further retreat from reality is technological reorganization of society in North America. If any political force succeeds in thwarting the required movement toward social change on this Continent, through stimulating a resurgence of reaction, its citizens will be buried as swiftly in social chaos as were those who perished in the Johnstown Flood.

—Harry Briggs, 12247-1

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'There's nothing wrong with a good political joke—unless it gets elected.'—June Kysilko, Washington (D.C.) Roll Call.

TECHNOCRACY IN THE FIELD

The Members of Technocracy apply their efforts in various ways to bring to the attention of all North Americans the significance of the present social trends and the need for a technological solution to the problems which arise out of them. They realize that only through their activities and efforts is the public made aware of Technocracy's Program.

TECHNOCRACY INC.
TECHNOCRACY PUBLIC MEETING
NORTH JR HIGH SUN. MAR 25 - 2 PM
TECHNOCRACY PUBLIC MEETING
NORTH JUNIOR HIGH SCHOOL

Technocracy just happened to appear on three levels in the above photo taken at the 12247-1 SHQ, Everett, Washington.

'Operation Everett'

'Operation Everett,' five months in the planning, six weeks in the intensive execution, came to a most successful conclusion the evening of March 25, closing a week-end of Area-wide participation in several phases of promotion for the Organization of Technocracy Inc., and its Social Program.

This 'Operation Everett' produced the largest public meeting in Everett in eight years, and more than 50 percent of those attending were non-members. Several Membership Applications were signed as a direct result of the meeting and a fine new list of those wishing to be informed of further activities has been compiled as a result of the expression-of-interest cards turned in at the meeting.

The Operation included as complete coverage publicity-wise as it was possible to achieve, including letters on Technocracy information announcing the Public Meeting and sent to outlying towns around Everett; newspaper advertising and write-ups; radio spot announcements; distribution of cards announcing the time and place of the Public Meeting; window show cards displayed in the stores willing to accept them (and a surprising number was happy to be of service); signs on the city buses and the bus serving the people in the Marysville, Lake Stevens, Arlington area; bumper strips and car-top signs. The full impact of the symbolization and the publicity for this meeting has led to a markedly renewed interest in Technocracy in the Everett community. In fact, Technocracy in Everett benefited by publicity of a kind and effectiveness never before received, namely, free radio and newspaper coverage over a wide area.

The Area support in achieving the success of 'Operation Everett' was stimulating to every Member of the Everett Section and all the Members of the visiting Sections and Groups as well. Doing a job together builds an esprit de corps that makes for solidarity and singleness of purpose. The magnitude of this activity required participation of members throughout the Area and without it we could not have made the considerable impact which was made at this time. The other Sections of this Area and other Areas Continent-wide will no doubt benefit from this operation just as we experienced an increase in literature sales and personal inquiries following 'Operation Bellingham.'

A crew prepares cartop signs for advertising the Public Meeting, May 25, at North Junior High School in Everett, Wash,

A city bus passes by with a Technocracy Public Meeting notice on prominent display.

Since the Operation, there has been an increase in the number of 'drop-ins,' making inquiry and buying literature; the attitude of the general public is one of greater respect and friendliness. The attitude of the Membership is one of renewed activity and a will to see the job we have assumed through to its conclusion; that is, continued distribution of information on Technocracy to the citizens of this Continent to the end that an informed citizenry will demand the installation of a functional distribution system, designed to operate our high-energy-consuming, technological complex in the only way in which it can be operated; for the distribution of an abundance to all citizens of this North American Continent.

We offer a salute to all Members of the Western Washington and Southwestern B. C. Areas who gave us far more assistance than we had expected, and without which we could not have accomplished so much, so easily.

When we asked for full support, we expressed the desire to be able to write and report to you: Operation Everett . . . Successfully Concluded. This we do, with pride and satisfaction! Now let's go on from here.

—Florence Huntting, 12247-1

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CANADA PHONE SYSTEM IN BRAZIL EXPROPRIATED

RIO DE JANEIRO — Guanabara state Gov. Carlos Lacerda announced the expropriation of the $30 million Canadian-owned Rio de Janeiro telephone system.

It was the second expropriation of a foreign-owned public utility in Brazil in less than two months. Earlier this year Rio Grande do Sul state Gov. Leonel Brizola expropriated the $7 million properties of the U. S.-owned national telephone company.

Lacerda's announcement of the expropriation came almost on the eve of Brazilian President Joao Goulart's scheduled departure for Washington on an official state visit.

Lacerda said he acted to prevent the company from selling its state assets to the federal government. The federal government planned to obtain the money from the United States government to take over the telephone system, he said.

—Seattle Post-Intelligencer

PUSH BUTTONS CONTROL CANAL FLOW

From an airy room more than ten miles away, three huge canal gates are raised or lowered as commanded by a dispatcher who does nothing more than press buttons on an inconspicuous instrument called a 'console.'

At every moment of the day and night, the dispatcher on duty knows exactly how much water is flowing down three canals which irrigate nearly half the 240,000-acre Salt River Project.

Saving in Wages

There are no wires between gates and control center. Communication is entirely by short-wave radio. 'Digital telemetering and control,' the technicians call it.

It's a new application of electronic technology to the management of irrigation water. It was devised by Motorola experts after Salt River Project engineers outlined what they needed. Named 'Telememory,' it will soon be offered to other large irrigation systems.

Telememory replaces one man who formerly lived in a house beside the three-way division gates two miles north of the city of Mesa. He now is switched to other duties. In three years the saving in wages will repay the cost of the automatic apparatus, according to Henry Shipley, project irrigation superintendent.

This factor, however, is overshadowed by other advantages.

Continuous Record

The site is commonly called the Mesa division gate. There the capacious South Canal, which brings water down from the Granite Reef Dam, is separated three ways. The Tempe Canal flows to the west, Consolidated to the east, and the South continues southward but much diminished in size.

At each gate is a gauge. A float which rides on the water's surface transmits its message to one of three recorders inside sheet-iron 'kiosks.'

A capillary pen traces a continuous record on a motor-driven roll of tape. That record is relayed to a transmitter that sends it on to the control center in a building near project headquarters, across Salt River from Tempe.

By telephone the watermasters in charge of the South Tempe and Consolidated Canals keep the dispatcher informed as to just how much water they need to fill orders from farmers, also municipalities that still receive canal water for lawn irrigation.

The dispatcher merely has to push the right button on the console, and the gate rises or drops as little as one-hundredth of a foot or as much as commanded.

If the commercial power that activates the motors and telemetry fails, a battery automatically takes over. That battery is good for 24 hours of normal operation.

Speed Emphasized

The console is designed to handle 28 units like the Mesa division gate. Now that Telememory has proved itself, other installations along the project's 242 miles of canal are planned.

Mr. Shipley says that operation by remote control is far faster and more exact than by a human gate tender. The tender has to sleep at night, and even when he is watching he can fail to note substantial variations in flow.

If a log, for instance, gets caught under a gate, some farmer down the line may be the first to notice the reduction in head. But the faraway dispatcher knows about it in a minute or two at most, by reading the depth record moving before him on tape. By raising the gate momentarily he can allow the obstruction to pass.

Watermasters and other project operating personnel have long traveled in cars connected with headquarters by radio-telephone. The next step was to install recorders and radio transmitters at the gauging stations along the Salt and Verde Rivers and Tonto Creek, the three streams which feed the lakes that store water for Salt River Valley.

At any interval set on a time switch, the height of the stream is flashed to the center and there recorded on tape. If a flood is roaring down out of the hills, the center knows it even before the cowboys and miners in the immediate neighborhood.

—Christian Science Monitor

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EUROPEAN PRODUCTION OF U. S. MISSILE STARTS

BONN—European production of the U. S. Sidewinder Missile has started. The West German Defense Ministry said the missile is being manufactured by West Germany, Denmark, Greece, Portugal, Norway, the Netherlands and Turkey.

—Los Angeles Times

TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in North America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $9.00 which are paid by the member to his local Section. Members wear the chromium and vermilion insignia of Technocracy — the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses, or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every state in the U. S. and all provinces in Canada, and in addition there are members in Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the nearest Technocracy unit.

WHO?

Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to North American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife — so long as you are a patriotic North American — you are welcome in Technocracy.

Pamphlets

Introduction to Technocracy	25c
America Must Show the Way	15c
Our Country Right or Wrong	15c
Continentalism—The Mandate of Survival	15c
I Am the Price System, and The Culture of Abundance	15c
Man-Hours and Distribution	15c
The Energy Certificate	15c
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A Demand For All Americans

There is one way, and one way only, of achieving an adequate social condition commensurate with the age in which you live, and that is to demand it for ALL Americans. If you demand it for yourself alone (or for your minority group), you will gain nothing but the well-deserved contempt of others. The individual can no longer think of himself as adequate, in terms of his own efforts; but only in terms of the efforts of the whole social organism of which he is a part. Technocracy is the only program on this Continent with the intent of improving the living standard and security of ALL citizens on this Continent

. . . Technocracy offers you the only pathway out of the woods of the Price System.

THE NORTHWEST

Technocrat

OCT. '62

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- Accent On The Trivial
- What Shall The Youth Be Taught?
- But What About Incentive?
- A New Axis Takes Form

No. 209, Vol. XXVI

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TECHNOCRACY INC.
Seattle, Washington

America Losing Leadership ?

Editor, The Times:

Recent Russian space-technology successes were interesting and commendable achievements, but have an ominous portent for the future of American leadership in science and technology, unless we start moving with a set of objectives worthy of this continent.

President Kennedy's and former President Eisenhower's 'reassurances' that we are doing well scientifically amount to political soothsaying, and are poor substitutes for strategic objectives and competent technical direction.

The fact is that Russia is gaining technological momentum, whether we like it or not. This is not because of her Communism, but rather because of her growing scientific proficiency.

For example, a comparison of engineering-graduate figures shows the United States with 52,000 graduates in 1950 and only 36,000 in 1960, while the Soviet Union had 38,000 in 1950 and 111,000 in 1960.

Are we less intelligent than the Russians? The answer is *no!* Do we have less resources to work with than the Russians? Again the answer is *no!*

We are still ahead of Russia in total development. But for how long will we be ahead if we keep marking time on our social and physical development of this continent?

In 1947, Technocracy pointed out in a booklet entitled 'Continentalism, The Mandate of Survival,' that 'it is a race whether the United States and Canada can generate a national will great enough for the achievement of the social destiny of this continent before a backward Russia exceeds us in its national development.'

Does the security of this continent transcend in importance playing politics and chasing a fast buck? If so, we'd better get organized and in action for competent social control by science. We are in trouble. And tranquilizers won't cure it.

—Harry Briggs, 8522 Dallas St.

(Editorial Comment: The United States, the only other major power of the world outside of the U.S.S.R., must expand or die as a first-class power. In the world of tomorrow, technology demands that this Continent become a contiguous continentalism great enough to ensure its continuance as a major power of the world.

Technocracy refuses to grant that the peoples of United States and Canada are less intelligent than the peoples of the U.S.S.R. Technocracy contends that the peoples of these two nations are the most capable and generally the most informed on earth, capable of dealing with reality when they are presented with the facts of any world situation if uncolored by political party propaganda and undistorted by the maneuvering of special economic privilege. Technocracy asks the question: When are the people of North America going to get to the job, not of stopping an expansion which has already occurred thousands of miles off this Continent, but of doing the job that our own social security demands —the job of the expansive consolidation of the New America?)

●

SOVIET OIL THREAT EXPECTED TO REACH CLIMAX IN 1963

The main threat of Soviet oil in world markets will probably reach a climax in 1963, by which time 40-inch crude lines will have been completed to carry Russian oil to coastal points, according to George F. Getty, president of Tidewater Oil Co.

Some common action could be blocked by antitrust law in Western nations. In a few years, after attaining good antitrust laws, all our Western European markets may be lost, Getty said.

—Petroleum Refiner

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COVER PICTURE

The striking picture on the cover was taken in the Grand Coulee Dam Power House as an operator made his rounds to check performance levels.

—Tech-photo by J. Berge

OCTOBER 1962 THE NORTHWEST Technocrat

ACCENT ON THE TRIVIAL

What is it that makes news in America? Is it the great scientific investigations and discoveries, the technological advances and breakthroughs, the destinies of nations, and the economic problems of the world societies? Or is it stories of specific crimes, scandals, accidents, stunts, sports events, and personal tragedies? All of these make news, but the emphasis is on that which is sensational in a trivial way rather than that which is profound.

AMERICANS and many others consider the United States to be the most advanced and most civilized nation on earth. It has the highest standard of living and the most sophisticated population. Surely it must be a nation of great ideals, profound causes, and intelligent thinkers, as well as a nation of masterful doers. Such a nation must have a grand strategy for the future, a strong, cohesive organization, and an informed, high-principled citizenry. One not acquainted with things as they are on the inside of this great nation might surmise the prevalence of such circumstances.

But he would be very far wrong. A perusal of the lives, the actions, and the conversation of Americans would reveal that very little of great moment comes to the surface. Their lives, their thoughts, and their actions are dominated by trivia so ordinary that historical records of the age would scarce take cognizance of it. Only now and then does a sparkle of greatness show through. In America, today, the accent is on the trivial.

What is it that makes news in America? Is it the great scientific investigations and discoveries, the technological advances and breakthroughs, the destinies of nations, and the economic problems of the world societies? Or is it stories of specific crimes, scandals, accidents, stunts, sports events, and personal tragedies? All of these make news, but the emphasis is on that which is sensational in a trivial way rather than that which is profound.

For example, the big-circulation tabloids recently carried front page banner headlines for a week on the quest of an American mother to get an abortion following the discovery that she had taken a fetus-deforming drug. This story might have continued longer on the front page except that it was bumped by the sudden death of a popular movie star who had taken an overdose of sleeping pills. This story was well on its way toward making headlines of its own for a week when it was interrupted for a few days by the sensation of the Russian feat of placing two astronauts into space orbits at the same time. After that, the headlines returned to trivia—a small child lost in the woods, a suspected murder, some more on the dead movie star, a brief glimpse at grand profiteering from government contracts by a former cabinet member, and so on.

One can get some idea of what makes interesting news for the public by watching the buyers of newspapers as a fresh edition of a popular daily reaches the streets of a large city, then noting what 'features' they turn to first. Many of them, almost without noting the banner headlines, turn to the page giving the horse-racing results for the day. Speculating on the horse races appears to be the great sensation in the lives of many Americans. Next, they turn to the sports section and peruse it avidly and often at length. Eventually, if time permits, they skim the front section for news of scandals, crimes, accidents, and spectaculars.

Not all newspapers nor all readers place so much emphasis on the minutiae of human events. Where there is the choice of a 'better newspaper,' such as the *New York Times*, the more erudite reader can engorge himself on international propaganda, management-labor disputes, pronouncements of profes-

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sional politicians, and the goings-on in high society (with major emphasis at present on the Kennedy family). Among the back pages will be news of business and finance, real estate developments and transfers, and progress reports in science and technology, especially as they deal with military and espionage matters or new commercial promotions. There are also reports and articles on foreign affairs, but not all of these are objective reports; the purposes of propaganda must first be fulfilled. For example, the *New York Times* still refuses to refer to the capital of China as Peking but uses the obsolete Japanese name Peiping. It still refers to Taiwan as 'Nationalist China.'

Trivia of the day are abundantly available in the news, locally and, where there is a 'human interest' angle, nationwide. But even the trivia is carefully selected; not all newsworthy minor events are reported. Much of it is quashed because it might bring embarrassment to some local personage or 'respectable' institution. For example, finding out the facts concerning the disposition of a criminal complaint against a scion of a wealthy family often proves an experience in frustration to an eager-beaver reporter. Sex offenses by clergymen are usually treated with 'discretion.' 'All the news that's fit to print' depends on whom and how it fits.

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Last August, there was a great play in the American news on the shooting down of a would-be escapee from East Germany into West Berlin, emphasizing that the youth had been left to bleed to death where he fell without a gesture at rescue by his 'assassins.' Only in one obscure reference did we find it mentioned that rescue of the wounded man was prevented by threat of gunfire from the Western side of the wall. Thus, much of the news is obscured or slanted by deletions of pertinent information. It is further slanted by editorial rhetoric and insinuations. This practice applies to all categories of news from local trivia to major events of worldwide significance.

Emphasis On Trivia

One should not be surprised at the emphasis on the trivial in the news and conversation. It is merely a reflection of that which touches our lives most often and absorbs most of our attention. An overwhelming amount of our time is taken up with things and happenings that are of slight significance in the general scheme of things; yet, they are, or seem to be, essential to our lives. Even the notable geniuses seldom behave as geniuses except for a very small fraction of their lives.

The common working man finds that the routine of living devours most of his time and attention. After waking in the morning, he has time only for making himself ready to go to work at his job. The job itself is probably of little interest to him other than as a means of earning an income. As for his evenings, there are a few routine chores to be attended, perhaps some wrangling with the family, a shift at watching television, and a gabfest with some crony, relative, or neighbor; and it is time for bed. The weekends, likewise, are devoted to trivial affairs; the major diversion is probably a drive somewhere with the family on Sunday afternoon.

The housewife, when she does not have a job of her own to supplement the family income, finds herself caught in a dull routine of housework, tending children, shopping, and television, all of which she takes far too seriously.

The majority of families never get beyond routine and trivia in their lives, finding a little spice, perhaps, in gambling (playing the races or attending local bingo games), a clandestine romance, or fandom in some sport; many devote themselves to a hobby of no great consequence. When one of these people dies, he gets a brief obituary in the local newspaper, which is maybe the fifth or sixth time his name has been mentioned in print during his lifetime.

The better educated and more sophisticated minority find a greater diversity of interests and manage to extract more time away from routine trivia to take note of major happenings in the world. They are not so completely captivated by television, sports, and household routine as are the 'lower class' workers and their families. They are more apt to seek a career in their employment rather than merely work as 'wage slaves.' They travel more, see a wider range of human activity, read more, and have several interests in which they participate. But that does not mean that they lead exciting and interesting lives all of the time or even much of the time. Even among the sophisticated, most of the conversation concerns trivia—weather, babies, pets, sports, gossip, sex, bargain hunting, their jobs, themselves. Most families have a few 'conversation pieces' around the house, just to have something to talk about.

Tabu On Serious Discussion

Discussion of serious matters, particularly controversial matters, is almost tabu in America. It is true that there is serious 'shop talk' among colleagues in the same specialty of knowledge or investigation, but this seriousness seldom carries over into other fields. In most gatherings, special effort is made to avoid analytical discussions of religious, political, racial, economic, or moral subjects when it is known that one or more of the members of the group is strongly biased on that subject.

There are a few 'official lines' which the majority will accept and iterate without necessarily understanding what they involve or how they apply. At present, the 'official lines' demand that we utter approval of Freedom, Democracy, private enterprise, godliness, party politics, and 'our rights' in other parts of the world, on the pro side; and they demand that we disavow socialism, atheism, government enterprise, and communist totalitarianism, and that we hate Khrushchev, Castro, and Mao Tse-tung, on the anti side. One is quite 'safe' if he stays within the official line, and most of us do just that.

There is one social issue, however, that can be counted on to get partisan response; that is, an issue raised by real estate 'developments.' But, even in these instances, what appears to be public clamor is only the expression of a vociferous minority. Almost any proposal that affects the real estate pattern of a neighborhood is bound to generate a controversy. This is doubly so if the proposed alteration would permit the intrusion of 'undesirable' population elements into the neighborhood. Even here, the majority complacently go along with the changes or quietly move out. Only a minority are interested in taking a firm stand in this most controversial of all issues.

Reading Habits Of Americans

The absence of concern over serious matters pertains to reading as well as to talking and doing. If a non-fiction book is read by as many as one per cent of the population, its title enjoys a long ride on the Best Seller list. Even so, many of the non-fiction best sellers deal with trivial matters — are designed more to entertain or titillate the reader than to inform him.

Basic knowledge about the earth and its regions is available to those who will stubbornly dig it out of a wide variety of publications. But much of this knowledge is not organized and presented to the public in an easily available form; and most people will not make a special effort to find out something that cannot be turned up easily. It seems that there must be some sort of a conspiracy to keep the public uninformed about the world we live in and how it is managed.

The average person's knowledge of geography, for example, is pitiful. But, then, when and where does one get a chance to study geography in school and thereby gain an interest in the subject? Usually it is given a quick brush-over somewhere in the grade schools and is never encountered again, even though the student continues on through college. A really interested person may get some notion of the world and its people from subscribing to and reading one or more of the geographical magazines; but, even here, the information is presented piecemeal, often in travelogue form, and is not always objectively accurate. After all, a geographical magazine would rather do a pleasant public relations job on a country than present the raw facts—which might get it banned in most of the countries of the world.

Another subject that presents difficulties to the inquiring student is history. There are plenty of volumes written on history, but mostly they are very selective in the aspects they present and are far too generous with subjective interpretations. As a consequence, the average student of history gains a misleading impression of what took place. For example, how many Americans know the really significant events and decisions pertaining to the reign of Henry VIII of England? Or, coming closer to home, how many know the principal facts in the life of Herbert Hoover? Certain trivia in history are played up out of all proportion to their significance and often out of the context of background conditions.

It is very difficult to find clear descriptions of the living conditions that affected the lives of the common people throughout history. It is still difficult to get clear descriptions of living conditions in many parts of the world, including certain details of American life. The history books, classic literature, the movies, and picture magazines emphasize the lives of the wealthy 'upper class' but slur over the poverty, neglect, and degradation of the 'lower classes.'

In most of our published literature, especially in school textbooks, it is deemed more important to serve the objectives of propaganda than to trust people with accurate information.

The present accent on the trivial is not entirely happenstance and unpremeditated. Much of it is planned that way. Because there are so many investments in the values of the Price System, and because these investments tend to be confiscatory in nature, a concerted effort is made by those in the position of higher advantage to misdirect the attention of the populace away from fundamentals toward inconsequential distractions. For example, those who have heavy investments in a mining company would much rather have you giving your attention to baseball or bingo than to the economics of the mining business. Price System operators do not like the suckers to find out just how much and how they are being gypped.

One may well ask, where will the emphasis be in a Technocracy? Will it also dwell on the trivial and neglect the profound?

It is certain that there will continue to be a great deal of popular interest in trivia even in the Technate. The 'little events' of life will go on taking up most of our time and occupy most of our attention. But there will also be ample opportunities for one to break out of the dull ruts that so many get caught in under the Price System.

In the Technate, one will not be limited by poverty to a slum-type pattern of living that is common for so many people under the Price System. Nor will one become exhausted from jobs of toil; and there will be no occasion to take on an extra job in the evenings, on week-ends, or during vacations. One will not have to worry about getting a job in order to eat; every citizen will have an income for life. Thus, one will have an opportunity to expand one's activities and interests beyond the dull demands of survival.

A high quality education will be available to all; so no one need be limited by the lack of an opportunity to become informed and trained in the things that appeal to him. Information on every subject will be compiled and collated in easily understood and readily available form. So, if one restricts himself to trivial matters, it will be because he chooses to do so and finds satisfaction in them. Further, that will be his privilege.

For those who prefer to delve into deeper subjects of learning and investigation, the accumulated knowledge on those subjects and the facilities for doing so will be at their call.

No doubt, the great majority will prefer to indulge in conventional patterns of living and recreation; but, even so, there will be a much wider range of these to choose from. Further, the Health Sequence will keep one in fit condition—vital and alert enough to follow one's desires. Organized recreation will be abundantly available for those who lack the individuality, the ingenuity, or the initiative to devise their own recreation.

Once we have broken out of the restraints, repressions, and fears of the Price System, the accent will no longer be deliberately placed on the trivial; for, investment values will no longer be at stake. The social emphasis will be on functional living, on social tranquility, and on planned progression.

Whether we have a Technate in the near future or don't have it is no trivial matter. It is the most important thing that North Americans can think about and work for. It is far more important than most of the things that armies of men have been sacrified for in the past. It will spell the difference between the glory and the degradation of our civilization. It's as important as that.

—Wilton Ivie

But What About Incentive?

THIS IS ONE of the first questions people ask when they encounter Technocracy's design for the distribution of abundance. The idea of equal incomes for everyone is so new and different that many are doubtful of its workability. Actually, it is not against human nature at all.

To understand this, let us begin with the dictionary. Webster's Unabridged 1947 edition gives the following:

"Incentive, noun: That which incites, or has a tendency to incite, to determination or action; motive; spur."

"Incite, verb, tr.: To move to action; to stir up; to spur or urge on."

According to this, things which cause people to act, are incentives. No difference is noted between physical and psychological incentives, nor is any particular kind of action specified. Anything which makes anybody do anything is an incentive.

Many people have the idea that incentive is always inborn in people, but this is not true. Some of the incentives which spur us to action do arise within ourselves; these are the needs and desires of our emotional natures. But many of them act on us from outside ourselves, and our reactions vary according to our individual attitudes and the nature of the situation.

This question of incentive actually could be said to consist of a number of subsidiary questions. When one man asks it, he is really asking 'Why should I try to do a good job when Joe Blank, who never did an honest day's work in his life, will get as much as I will?' Another is wondering 'Why should I get an education to be a scientist if my income won't be any more than a laborer's? Why strain the brain?' Still another is thinking 'Why should I take on any burden of responsibility, when Tom Souse will receive as much as I do?' And some are thinking 'Why work at all?' or 'What about the lazy man who won't work?'

These are all natural and reasonable questions, but they are all based on the Price System concept that the worth and performance of a man are measured by the size of his paycheck. In the Price System this is often true, but even here there is a concealed joker. Many people are dissatisfied by the proposal of equal incomes for all, yet they will accord social recognition and prestige to individuals who display evidence of large incomes, even though that wealth may be merely inherited! In the Price System, having the money is what counts, and too few people pause to ask how it was acquired. If they did, they would realize that the prestige of their own honest accomplishments is lessened by the prestige accorded the idle rich.

In the Price System, money is the reward for either honest work or successful chiseling. In the Technate, the individual citizen's 'income' (we have no other word for it) will be his because he is a citizen, and not because he works for it. If he is unable to work, or has retired, he will still receive it. Nor will that income be for the purpose of 'paying for' the goods and services received. This is startling at first, but actually it would be as simple just to give people what they want as it would to use Energy Certificates—except for two things. It is necessary to know what goods are on hand, what is in demand and where it is needed, and how much more must be produced. And it is vital to maintain a careful control of our non-replaceable resources.

No Purchase Of Recognition

The fact that income will not represent payment for work or goods will mean that social recognition and prestige cannot be bought, but must be earned. The person who wants to 'be somebody' will have to *do* something that is valuable to society. 'Who do you know?' will cease to matter; 'What do you know?' will become all-important.

This will automatically take care of Joe Blank; he will be an unrespected nobody. If this bothers him, he may exert himself. It will also take care of Tom Souse, but he may find that his reasons for drinking are vanishing. The man who is willing to do a good job will continue to be appreciated and respected for his performance, and will be able to advance as far as his abilities will allow—and poli-

tics cannot do him out of a well-earned promotion!
The question 'Why work at all?' can be answered in very few words. If nobody works we will have nothing. We're not such fools as to let ourselves starve.

Now for the man who refuses to work: When most people are pitching in to provide for the general welfare, the way of the shirker is hard — and the pressure of public opinion is a very potent force. But really 'lazy' people are sick, physically or mentally; they need treatment. However, many of those who today refuse to work undoubtedly will find tomorrow that when the rest of society is happily accomplishing things, and they themselves can find some occupation they can enjoy, they will be happy to join the ranks of the socially useful.

We need not be concerned about the individual who wonders why he should become educated when it won't bring him a larger income. It would bring him prestige, but if he had the brains to be a scientist he would welcome the opportunity for an education. In the Price System, education is sometimes a matter of luck (which occasionally comes to those who lack the capacity to use it), and sometimes is a matter of bitter struggle. In the Technate there will be no such struggle; education will be free, and available to all. No brains will need to be 'strained,' because nobody will be expected to undertake training in a line that is beyond his natural capacities or that is outside his field of interest, nor will anyone be pushed beyond his natural pace. People with extensive brain power can acquire extensive educations, and people with lesser brain power can aim at lesser goals within their abilities.

A Matter Of Responsibility

The matter of responsibility is in some respects somewhat similar to another attribute of human nature—initiative. Initiative and incentive are not at all the same thing. Incentives, whether from within or without, act upon everyone in much the same manner, and only the mentally defective or the emotionally ill are immune. Initiative is an inborn 'self-starter' which acts as an incentive to those who have it, but it is not found in everyone, and though it can be inhibited it cannot be acquired. Responsibility also is an inner attribute not found in everyone. It is a feeling that it is 'up to them' to do things. Although it appears to be inborn, it may be possible to acquire it. Those who are concerned about the 'burden' of responsibility are like those who worry about straining their brains—if they had the ability to carry responsibility they would be doing it. Those who can do so take it on without appearing to have to think about it. Nor is this always merely a desire to be important; some of those who are carrying the heaviest responsibilities are almost unknown.

But all this still does not answer completely the basic question as to what incentives, if any, will exist in the Technate. So long as life and activity continue, incentives will exist, but our reactions will change as the circumstances change. In the Technate the same incentives we know now will continue to operate, the necessity to provide food and shelter being the foremost. The desire for social prestige will not vanish; it is part of human nature. So are the creative impulse and the desire for a feeling of participation in some important and worthwhile activity. All of these aspects of human nature are necessary and desirable attributes—they have survival value. But in the Price System, opportunities for their satisfaction are too often sporadic, haphazard, unsatisfactory, or non-existent, so that individual actions are often socially undesirable.

In the Technate, there will be room and opportunity for the satisfaction of all the desirable attributes of human nature, because the society will be organized with them in mind, so that they can result in useful and necessary activities. Instead of a ferocious scramble for survival, there will be orderly function, which will provide for the emotional needs of the individual members of society while it meets their physical requirements. Nobody will merely 'put in his time,' because no matter what he is doing, it will be a task which is peculiarly his own, which he has selected for himself, and from which he will derive satisfaction and happiness. No longer will there be people who are unhappy in their work because it either demands of them more than they have the ability to do, or fails to make full use of the abilities they possess. Nor will there be those who are chained to distasteful jobs by economic obligations. Also, with shorter working hours and vastly enlarged opportunities for satisfying leisure activities, even routine jobs will not be objectionable. After all, working will be secondary to living in this Age of Abundance.

—Helen M. Higbee, 12247-3

SOME THINGS TO THINK ABOUT

... The average American now has to pay out more of his income on taxes than on food, according to the Congressional Record of April 10, 1961. In his working day, he puts in one hour and thirty-nine minutes to earn enough for the day's food; but he must work two hours and twenty-nine minutes to pay his federal, state and local taxes. Thus, thirty percent of his income is going to satisfy the tax gatherers.

... Not only are taxes rising, making it necessary somehow to obtain more income to pay them, but jobs in many industries are becoming more and more scarce, as technology moves ahead in the production of goods and services. President Ralph Helstein of the Packinghouse Workers says: 'Will we not have to change our ideas because of the new technology, as to what constitutes work and how income is provided? Over the centuries income for the most of humanity has depended on work. Is there any necessary relationship between income and work? There are thousands of Americans whose income is unrelated to work. The problem is: How do we assure income for workers if work is not available?' We refer Mr. Helstein to Technocracy's design for the distribution of abundance. What labor needs is a new strategy, namely, to aim for the elimination of the Price System, and to supplant it with a Technocracy.

... We pride ourselves on our abundant life and hold ourselves up to the world as examples of success. But the seamy side of our living standard is also showing in the fact that 77 million Americans live in poverty or in near-poverty, according to Leon Keyserling, who once headed the President's Council of Economic Advisers in the Truman Administration. Meanwhile, we lock up and destroy billions of dollars in food surpluses to maintain prices in the carrying out of the most insane policy of preserving scarcity ever concocted. As Technocracy has often pointed out, a sense of success is about the worst thing that can happen to you, because it destroys the desire to go on to new challenges.

... If tigers in India were killing 40,000 people annually, and were maiming a million more, no doubt there would be a world-wide crusade against the tiger. Yet, in the U. S., figures cited are the yearly toll of the most inefficient and dangerous mode of travel ever devised by man—the automobile. As the slaughter mounts year by year, the only response to it is the admonition to 'drive carefully.' Why doesn't someone do something about the auto death and injury toll? Very simply because the automobile and the havoc it wreaks cause Americans to spend twenty percent of their disposable income in ways related to this method of transportation. However, Technocracy points out that the automobile is becoming too expensive, even for America. Sheer magnitude of the problems of auto congestion and petroleum resource depletion will compel the arrival of rapid transit type mass transportation.

... it is reported by the American Nurses' Association that some 200,000 Registered Nurses are now inactive in their profession. The reason given is inadequate compensation. No doubt, more adequate pay than the present median salary of $325 per month would attract many nurses back to work. But more pay is not a fundamental solution to the improvement of nursing services. This profession, which requires a high degree of training and dedication to the concept of service, did not attract its members in the first place on the basis of pay. The fact is that service occupations, and the concept of service, are regarded with a certain contempt by the Price System, which, on the other hand, honors the chiseler. The result of increasing emphasis on chiseling, as the honorable means of making a livelihood, is downgrading of service occupations. The real answer to improving the status of service occupations again forces us to recognize that the Price System must go. Then the competent will be attracted back to service occupations and will get proper recognition for services rendered, since they will not have to worry about income in a Technocracy.

12247-1

IMPACT OF TECHNOLOGY ABROAD

More profoundly disturbing to the Old Order, more devastating to the age-old ideas of mankind than any political concept, past or present, is the march of technology around the world. Social change, induced by technology, population pressure and the simple desire of peoples for something better than they have now, is breaking down the Gates of the Old Order. Nothing, short of total annihilation, will stop social change either in North America or abroad.

NIGERIA PLANS THREE POWER DAMS ON NIGER

KADUNA, NIGERIA—Following the example of other African nations, Nigeria is planning a dam to provide hydroelectric power.

The dam will harness the 2,600-mile River Niger.

The cost of the first dam is estimated at 76,000,000 pounds ($212,800,000).

The lake created by the dam will be 100 miles long and 25 miles across at its widest point.

Construction of two other dams by 1982, which would bring the total cost to an estimated 200,000,000 pounds ($560,000,000).

For the first dam, Nigeria hopes to raise about a third of the money from the World Bank, a third through overseas loans and the remainder internationally.

The dam proposal has been criticized in some political circles as a 'prestige project.'

No date for a start of construction has been set.

—Reuters

UNIVERSITY OF MELBOURNE TO USE ANALOG COMPUTER

University of Melbourne, Melbourne, Australia, has taken delivery on an AD-1-64 PB electronic analog computer from Applied Dynamics, Inc., Ann Arbor, Michigan.

The computer will be used by the University departments of chemical, electrical and mechanical engineering, and engineering mathematics. Application will include both instruction and research.

—Computers and Automation

RUBBER PLANT SET FOR AFRICA

AKRON, OHIO—The Goodyear Tire & Rubber Co. (SA) (Pty) Ltd., will participate in a new synthetic rubber plant capable of supplying the Republic of South Africa's entire needs, it was announced here by Goodyear International Corp.

Plans for building the $14 million plant at Sasolburg were announced in Cape Town by the Minister of Economic Affairs and the chairman of the Synthetic Rubber Development Corp., which will be responsible for building and operation of the plant.

—Journal of Commerce

RIO RUBBER PLANT

The first synthetic rubber plant in Latin America has gone on stream near Rio de Janeiro, Brazil. The Firestone Tire & Rubber Co., Akron, Ohio, assisted in building the plant for Petrobas, a Brazilian government-controlled agency. It will have an annual capacity of 10,000 tons of SBR, and will employ 500 persons.

—Rubber World

VENEZUELA OIL PODUCTION HITS NEW DAILY HIGH

CARACAS—Oil production in Venezuela is exceeding last year's output by ten percent, it was announced recently. Daily average for year up to now is 3,205,059 barrels, against 2,906,836 during the same period last year.

Officials said they expect average production for this year to stay at about 3,200,000 barrels daily, creating a new record for the country.

Exploration activity, however, was reported at low level. The average number of new wells being drilled this year was said to be 28, against 34 last year.

Exports of oil and refined products directly from Venezuela were eight percent above last year for the first five months, it was announced. The daily total this year was 444,866 barrels—about 35,000 more than last year.

—New York Times News Service

CHINESE PRODUCTION GROWING

While Red China has recorded a colossal setback in food production, a sharp drop in foreign trade, and contraction in gross national product, the nation's industrial output keeps gaining, a fact that U. S. newspapers fail to report. Steel output climbed almost 27 percent last year—to 23 million short tons. (And a Japanese survey estimates the nation will turn out more than 50 million short tons by 1972.) And automotive production is up, as China no longer buys trucks from U.S.S.R.

—Steel

YUGOSLAVS AID CUBA

BELGRADE—A Yugoslav concern has a $1,300,000,000 contract to supply Cuba with a cottonseed-oil-processing factory.

—Seattle Times

ATOM POWER PLANT

A prototype Atom Power Plant is under construction on the Alberche River near Madrid. The plant is being built by the Spanish Nuclear Energy Board for Atomic International, a division of North American Aviation. The contract calls for construction of a power station rated at 30,000 kilowatts. Atomic International and the Spanish government will cooperate in a program of research and development. Plans are also in the works for two industrial atomic power plants by Spanish concerns.

—Spanish News Letter

SPHERICAL BLAST FURNACE PUT INTO PRODUCTION

A spherical blast furnace has been put into operation by Dzerzhinsky Works in Russia. It has no foundation in the accepted sense, but rests on columns which allow access to all of its surfaces. The furnace's useful life is projected at 20 years.

—Steel

WATER PROGRAM FOR LATIN AMERICA OUTLINED

The ten-year community water supply program envisioned by the Alliance for Progress would insure adequate water for nearly 110 million inhabitants of Latin American countries over the next decade, at an estimated construction cost of $690 million annually, according to a comprehensive study issued by the Business and Defense Services Administration, U. S. Department of Commerce.

The study, 'Community Water Supply Program for Latin America,' estimated that the ten-year undertaking would be designed to provide facilities for at least 70 percent of the urban population, and 50 percent of the rural population of the 19 member countries.

Of Latin America's total population of 182 million in 1958, more than 100 million were without safe and adequate water supply. The estimated population in 1961 was 198,900,000 and an increase of more than 60 million is projected by 1970.

The program, the study says, would offer a large potential market for consulting engineers, contractors and manufacturers in this country.

—Water & Sewage Works

UTAH GETS CONTRACT TO BUILD DAM IN TUNISIA

Contract for constructing Oued Nebanna Dam in Tunisia has been awarded to Utah Construction & Mining Co., E. W. Littlefield, president and general manager, has announced.

Located approximately 90 miles southwest of Tunis, the dam will add substantially to the water supplies available for irrigation. Flood control and river regulation are secondary benefits which will also be realized.

With a height of 200 feet, the rock-fill dam will contain about 2,600,000 cubic yards of rock. Utah's bid of $13,200,000 was the lowest of five. Construction of the dam is the result of many years of planning. The U. S. Development Loan Fund is assisting in financing the project.

Work at the site will start at once with completion scheduled for early 1965.

—Western Construction

IRON PRODUCTION IN PERU

An American company is undertaking a large development program to mine Peru's valuable iron ore reserves.

This mountainous South American country has long been known to have enormous deposits of iron ore in the Central and Western Andes mountains, but until the Marcona Mining Company started operations less than nine years ago, they had never been commercially developed.

Between 1954 and 1961, Marcona's shipments of hematite ore—averaging 60 percent iron content—have risen from 1,900,000 tons annually to more than 4,000,000.

With the recent opening of a new processing plant and shipping port, the production and export of Peruvian iron ore has entered a new phase. The plant and port at San Nicolas Bay, about 300 miles south of Lima, give Marcona a second set of port facilities and the concentration equipment at the processing plant will raise the iron content.

Geological exploration on the Marcona Plateau has increased the original estimate of 100,000,000 tons of ore reserves to 350,000,000 tons of proven deposits and this may be doubled by future exploration.

The Marcona Company was formed by the Utah Mining and Construction Company of San Francisco and the Cyprus Mines Corporation of Los Angeles to develop the Peruvian reserves.

The company works under a long lease from the Government-owned Corporacion Peruana del Santa, paying a six percent royalty on the first million tons mined and seven percent on production above that. Up to the end of 1961, royalty payments had totaled more than $18,700,000.

—New York Times

COMPUTER-CONTROLLED CEMENT PLANT

A cement plant, equipped with four wet-processing kilns and said to be the first to be designed and constructed around a computer control system, is nearing completion in Japan. A closed loop system will integrate control and wet-blending and clinker burning operations as well as schedule raw materials in the plant of Chichibu Cement Company near Tokyo.

—Mining Congress Journal

JAPAN LEADS WORLD IN SHIPBUILDING

LONDON—Japan has replaced Britain as the world's busiest shipbuilding nation, Lloyd's Shipping Register reported recently.

At the end of last month, Japan had 1,490,877 tons under construction, 16.2 percent of the world total. This was an increase of 237,753 tons over the previous quarter.

The 184 ships of 1,292,146 tons building in British yards represented 14.1 percent of the world total. Excluding war years, this is this country's smallest share in history.

In terms of tonnage launched, Britain lost the lead to Japan in 1956. But until the last quarter it kept its lead in tonnage building.

West Germany was in third place June 30, with 936,484 tons building. Sweden has 773,248 tons; France, 673,735, and the Netherlands, 635,812.

The United States was in ninth place.

Figures were not reported for Communist China, East Germany or Russia.

—Seattle Times

CONTINENTAL TRENDS IN TECHNOLOGY

MEXICO BIG PAPER MAKER

MEXICO CITY—Mexico reports it is the largest producer of cellulose and paper in Latin America. This year paper production is expected to reach 500,000 tons, a 58 percent increase in six years.

The National Paper Industries' chamber said that by 1965 Mexico should be able to fill all its own needs. Last year pulp imports totaled 49,000 tons, costing $6.4 million. Imports of paper were 93,000 tons, costing $14.7 million.

There are at present in Mexico 45 paper and cellulose factories, six of them producing only cellulose and four mechanical pulp. They are situated mainly in the State of Mexico and the capital.

—Journal of Commerce

MEXICAN EXPANSION

The Mexican government, with the help of two World Bank loans totaling $160.5 million, plans a country-wide expansion of electric power facilities and extension of the toll transport system. The project also includes the construction of 2,800 miles of transmission lines with associated substations. The program also provides for establishment of an efficient ferry service about 250 miles across the Bay of California from La Paz, the main city of Baja California to Mazatlan, the nearest well-equipped port on the continental shore of Mexico.

—Marine Digest

HASTY HANDLER

Construction of a massive $12¾ million grain handling and storage terminal by Carter Construction Co. Ltd., Toronto, for the National Harbours Board is considerably altering the skyline at the east end of the Port of Montreal.

With an elevator capable of handling over 100 million bushels of grain per year, the new, 232-foot high structure will be one of the fastest unloading and shipping units in North America.

Built as a longitudinal pier of concrete caisson-bearing piles sunk into the harbor's bedrock, the elevator is constructed of reinforced concrete. In effect a block of five sections, the elevator will have an overall length of 1200 feet and will contain 150 large bins and 185 smaller ones. Height of the two north and two south sections will be 144 feet with the center section about 90 feet higher.

Designed by C. D. Howe Company Ltd., consulting engineers for the project, the marine receiving equipment consists of three travelling marine towers, the largest ever to be built. Uniquely equipped with their own automatic scales—weighing grain before discharge into the bins—the 200-foot high towers travel on four steel rails 700 feet long, and will each have the capacity to unload at the unusually high rate of 40,000 bushels per hour.

Construction began late last year and has continued throughout the winter. The project is scheduled for completion in the spring of 1963.

—Roads and Engineering Construction

1,000,000-BARREL A YEAR CEMENT PLANT

west of Bellefonte, Pa., will be built by National Gypsum

A 1,000,000-bbl.-per-year cement plant, to be located Co. It will be adjacent to the company's lime plant in Buffalo Run Valley and is expected to be a $5,000,000 facility.

—Mining Congress Journal

BREAD-BOX FURNACE GENERATES SUN'S HEAT IN THREE SECONDS

A furnace, based on a new heating concept, can produce temperatures in excess of 5,000° F. within seconds. It is about the size of a bread box and plugs into a standard electrical outlet.

Developed by Baird-Atomic, Inc., of Cambridge, Mass., the Kopito Instant Furnace uses a heating element that is a strip of graphite cloth supplied by the National Carbon Company, a division of Union Carbide Corp. Electric current supplied by an autotransformer is conducted to the graphite cloth through water-cooled carbon rolls, and the sample or specimen to be heated rests directly on the inert graphite cloth strip. After the furnace is turned off, the heating element can be handled within 15 seconds; temperatures set to a harmless level within two minutes.

The instant furnace is expected to find a wide range of application in the teaching of physics, chemistry, and metallurgy in both college and high school classrooms. In industry its design permits simultaneous demonstration and precise measurement of such high temperature properties of materials as thermal expansion and strain, electric conductivity, emissivity, specific and fusion heat, and phase transformation temperatures. Though most experiments can be conducted in the open air, the furnace is equipped with a bell jar and connections for controlled atmosphere work under conditions of complete visibility.

Baird-Atomic is preparing a comprehensive teaching manual describing the various experiments that can be performed. Included are alloy production, ore refining, crystal growing, production of glass and calcium carbide, illustration of service tension, radiation characteristics and phase transformation, demonstration of chemical reactions, and the obtaining of emission and absorption spectra.

—Electrical Engineering

GAS STORAGE

Drilling is underway to pave the way for underground storage facilities for 300 million cubic feet of natural gas near Melfort. Plans call for pumping out salt beds 3800 feet below the surface. Using water as a solvent, the salt would form a brine and be pumped out. Drilling should be completed July 1. Similar storage facilities have been used near Unity. Natural gas is stored during off season to handle the demand during winter months.

—Western Business & Industry, Vancouver, B. C.

NEW MINE TO SERVE UTILITY

Central Illinois Public Service Co. plans to file an application with the Illinois Commerce Commission for approval of a 350,000-kw. electric generating station. The station will be located at the mouth of a new mine to be opened by Consolidated Coal Co. near Coffeen, Montgomery County. Initial annual output of the mine to be 1,000,000 tons with present plans calling for eventual expansion to 3,700,000 tons per year. The new line which is scheduled for completion by mid-1965, will be operated by Truax-Traer Division of Consol under a long-term contract. It will serve a power project that ultimately will produce some 1,000,000-kw. and will represent an investment of over $125,000,000.

—Mining Congress Journal

ALTITUDE CONTROL SYSTEM

A device that can automatically control a plane's altitude has been developed. This new system has made it possible to fly reliably at altitudes as low as 50 feet at speeds approaching that of sound. It has been successfully tested in low-flying U. S. Navy drones. A plane can travel at pre-determined heights with an accuracy in altitude of better than one foot, even when the plane is making a sharp turn. Accuracy is independent of the load, speed, or shape of the aircraft.

The altitude control system works by bouncing radar signals continuously off the ground below the aircraft. The resulting information is relayed to an electronic brain which makes sure that the plane's actual height above the ground and the pre-programmed height are the same. The system uses a computer-controller which can be operated by manual or radio command. Signals received by the computer-controller are compared in equipment, and an altitude signal is computed for the autopilot. The equipment disengages and the aircraft is maintained in a safe flying condition if a deviation from pre-programmed instructions occurs.

The equipment can be matched to any type of aircraft by a single adjustment.

—Computers and Automation

GAS PROJECT

Pacific Petroleums Ltd. and Trans-Canada Pipe Lines Ltd. have announced plans for a project to process and market natural gas liquids now available in the Trans-Canada natural gas stream. Under the agreement between the two companies, an extraction plant, the largest of its kind in the world, will be located near Empress, Alberta, to remove from the natural gas, propane, iso-butane, normal butane and natural gasoline. The project also includes a new 580-mile, six-inch pipeline, from the plant to Winnipeg, generally paralleling the present Trans-Canada system. The plant will have an initial capacity of processing one billion cubic feet of natural gas daily and later will be expanded to handle 1½ billion cubic feet daily. Plant production will initially be 18,000 to 20,000 barrels a day of propane, iso-butane, normal butane and natural gasoline. Initial cost of the project is estimated at $27 million.

—Western Business & Industry, Vancouver, B. C.

MINE AND REFINERY IN PRODUCTION

Stauffer Chemical Company has brought on stream its new trona mine and soda ash refinery near Green River, Wyoming, five months ahead of schedule. Representing an investment of more than $10,000,000, the plant will produce between 150,000 tons and 200,000 tons of soda ash annually, approximately doubling the company's output.

The Wyoming project has been under development for several years. Stauffer discovered the massive trona deposits at Green River in 1958 and has since blocked out reserves estimated at 200,000,000 tons. The deposit is about 10 feet thick and 900 feet below surface. Construction on the project was begun in 1960. In addition to sinking mine shafts, the company built a rail and auto bridge spanning the Green River, a 10-mile railroad spur, a water intake and pumping station, and a refinery which operates on a Stauffer-developed process. A gas pipeline and access road also had to be brought into the property.

—Mining Congress Journal

NEW POWER PROJECT

ROME—The Italian Panedile-Peruvian Company has signed a contract with the Peruvian Government for the construction of a new hydroelectric plant at Macchupicchu. It will have an output capacity of 20,000 kilowatt hours.

The plant will be used primarily to supply power to a new fertilizer factory to be built. Cost of the two projects will reach $83 million.

—Journal of Commerce

BETHLEHEM OPERATING TAR DISTILLATION PLANT

A new coal tar distillation plant, capable of processing more than 50,000,000 gallons of tar per year, has been placed in operation at the Bethlehem Steel Company Sparrows Point plant, according to Wilbur G. Smith, general manager.

Developed by Bethlehem in cooperation with the Allied Chemical Corp., the new plant's coal tar output is expected to yield a carbolic oil fraction containing an estimated 42,000,000 pounds of crude napthalene as well as valuable tar acids.

The demand for napthalene, a raw material used in the manufacture of plastics, alkyd resin paints and coatings for automobiles and appliances and for household uses, has risen to a point where it now exceeds 500,000,000 pounds a year.

Bethlehem's stake in this market is a major consideration, because the chemical industry is dependent on coke-oven production for the coal by-product from which the napthalene is obtained. Coke production at Sparrows Point amounts to approximately 10,000 tons per day. The plant has 12 coke-oven batteries, each one containing from 60 to 65 chambers for the coking of soft coal.

The tar distillation plant is on a site located at the southeast corner of the coke oven area and consists of a modern vacuum distillation unit designed and erected by the Wilputte Division of Allied Chemical.

One of the features of the new installation is an extensive blending system for combining pitch from the tar distillation operation with supplemental purchased fuel in order to provide fuel requirements of the open hearth furnaces.

—Iron and Steel Engineer

DEVELOPING SOCIAL PROBLEMS

A SIGN OF THE TIMES

WASHINGTON—The FBI reported that four major crimes a minute were committed in the United States last year—an all-time high.

In 1961 there were an estimated 1,926,000 crimes of murder, forcible rape, robbery, aggravated assault, burglary, larceny and auto theft. This was a three percent increase over the previous record set in 1960.

Crimes committed by persons under 18 rose four percent over 1960.

There were 71 law enforcement officers killed last year and 13,190 assaults against police officers were recorded —an average of eight for every 100 officers.

—Everett Daily Herald

AND ANOTHER

CHICAGO—An optometrist said Americans consume aspirin tablets at the rate of 532 per second—or about two million every hour—in an attempt to alleviate headaches.

—Long Beach Independent

CONSUMER CREDIT $290 BILLION

Topics discussed at this week's National Instalment Credit Conference of the American Bankers Association in Chicago ranged from bankruptcies to auto sales to 'captive' financing. A capsule round-up:

Henry C. Coleman, chairman of Commercial Bank, Daytona Beach, Florida: 'Consumers owed $290 billion at the end of 1961—including $175 billion in home mortgages, $43.5 billion on instalment contracts, and $13.5 billion on charge accounts. Consumer credit will continue to expand; where there is mass production, there must be credit to help finance the sale of production.'

Herbert R. Silverman, president of James Talcott, Inc.: 'I cannot conceal a certain apprehension when I note at least ten major manufacturing and retailing companies . . . have established "captive" sales finance subsidiaries within the past year or so. Many (have not) lived up to the rosy profit expectations that were anticipated . . .'

—Los Angeles Times

DRAINING-FLOODING 'FOLLY' TO END

WASHINGTON—The situation in which one federal agency is draining marshlands while another agency floods new areas to accommodate ducks and migratory birds is about to end, Senator Proxmire, Democrat, Wisconsin, reported recently.

Proxmire, a member of the subcommittee having jurisdiction over the government's wet-lands-drainage program, said in a statement:

'I can report that this conservation folly and fiscal nightmare is about to be terminated . . .

'For years,' he said, 'millions of dollars have been spent to drain wet-lands in the main duck-breeding grounds (largely in Minnesota and the Dakotas), while at the same time the United States Fish and Wildlife Service was actually flooding new lands to create new wet-lands for ducks.'

Proxmire said the House has passed a bill, and his Senate committee is about to approve it, under which the Agriculture Department may not help finance drainage of any farm land if the Fish and Wildlife Service finds that wildlife preservation would be harmed.

—Seattle Times

BABY DISFIGURED BY RAT BITES

A two-month-old girl badly gnawed by rats as she slept in her carriage at home in Brooklyn will probably be disfigured for life, Long Island College Hospital authorities said recently.

The hospital changed its description of the condition of the baby, Pamela Brooks, from 'very, very critical' to 'fair.' She was badly bitten about the nose and mouth.

The baby was attacked by rats in her carriage at 566 Baltic Street, Brooklyn. She was heard screaming by her mother as she awoke for the regular 6:30 a.m. feeding.

The father, Robert Brooks, a factory worker, was quoted as saying he had complained many times about rat infestation to the landlord.

—New York Herald Tribune

THE WASTE OF A MILLION KIDS A YEAR

Twenty-one millionaires sat around a table in Kansas City not long ago and, with disbelief and frustration, faced the fact that they couldn't find a job for a boy. Statement of Judge Mary Conway Kohler, formerly of the San Francisco juvenile court.

—Congressional Record, April 16, 1962

ILLITERACY IN THE U. S.

WASHINGTON — Almost 3,000,000 American adults cannot read the label on a medicine bottle, a help wanted ad in the newspaper or the report cards children bring home from school.

This was the key statistic presented as the Kennedy administration launched its drive in Congress for a program to combat adult illiteracy. It was presented to a special House education subcommittee by Wilbur J. Cohen, assistant secretary of health, education and welfare.

Labor Secretary Arthur J. Goldberg, also testifying in support of the program, said there were 8,000,000 men and women over 25 who had not gone beyond the fifth grade.

Goldberg called on the subcommittee and Congress to approve the five-year $50,000,000 program designed to encourage states to establish basic adult education courses.

Cohen earlier told the subcommittee the most serious problem facing the nation was the 2,850,000 persons who are unable to read or write.

Cohen said illiteracy was a serious factor in the cold war and pointed out that more than 19 percent of the recruits examined during the Korean War were rejected on the grounds of educational deficiencies.

The adult literacy program is one element in the Kennedy administration's plan to make seventh grade the basic ended June 30, 1961, 146,643 bankruptcies were filed, a minimum educational level in the United States.

—The Hamilton Spectator

Automation Goes To Church

NEW YORK—The congregation adjusts to their seats as piped-in organ music plays the appropriate selection. Lights, programmed to dim at the precise moment, carry eyes in the direction of the empty pulpit.

No one in the church hears the soft hum of the tape recorder as the professional voice with adjusted local accent delivers the sermon. Discreet, numbered lights in each pew alert worshippers to the correct hymn.

Thus, the master tape moves the service at a dignified and deliberate pace toward its gentle programmed conclusion.

Who in this increasingly automated world can predict that such an electronic church service will never be staged?

Officials at the United Church of Christ are not worried right now about pastors being replaced by machines in any of its 6400 churches. But they are concerned with the problem of automation, nevertheless.

Already some churches have arrived at the piped-in music stage. At the United Church's mission board, machines have displaced about ten persons. In its research department the job of 15 men is now being handled by an electronic card sorter.

This denomination, with about two million members, is alarmed enough to do something about it. Its Council for Christian Social Action lays the problem on the line in a 27-minute film entitled simply 'Tomorrow?'

Producer of the movie is the Rev. Everett C. Parker, director of the church's Office of Communication.

'We don't try to offer any solution to what President Kennedy has called "the major domestic challenge of the 1960s." What we are trying to do,' said Dr. Parker, 'is to alert people to the problem and get them thinking.'

Some 300 copies of the film are being distributed to church film libraries around the country. In coming months, Dr. Parker hopes church, labor and management groups and the general public will be stimulated to assess automation's impact in local communities.

A big automated oil refinery. — Work force: six men and a computer which can store 'memory.'

A factory manager who admits to concern over employees losing their jobs, but who states, 'It is the job of management to chop people out.'

A union shop steward in an automated factory who fears for the future of the labor movement in the electronic age.

The all too familiar lines of unemployed searching vainly for work as sophisticated machines move into the factories.

Why has the United Church of Christ taken an interest in the problem?

'The church has the greatest opportunity for leadership in finding a solution,' said Dr. Parker. 'Almost everybody will be affected one way or another by automation in coming years.'

Elsewhere, the National Council of Church, which embraces 33 denominations—the United Church of Christ included — is conducting study sessions throughout the country to explore the problem.

A national study conference will be held in Pittsburgh in November. The 400 persons expected to attend will step from the ranks of the clergy, labor, business, government and education.

As Dr. Parker says, automation seems to be everybody's problem.

—NEA Service

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PERSONAL BANKRUPTCIES UP 33%

CHICAGO — Personal bankruptcies pose a growing threat to banks at a time when the banks are placing increased emphasis on consumer loans to offset the impact on earnings of higher interest paid to savers, J. O. Elmer, Wells Fargo Bank vice-president, said.

In the fiscal year ending June 30, he told the Instalment Credit Conference of the American Bankers Association, the number of personal bankruptcies is expected to increase 10% from the preceding 12 months. For the year 33% gain from the preceding year and more than double the rate of five years ago, he added.

Nine out of ten bankruptcies filed in the latest fiscal year were non-business, or personal, with the number of such failures up 560% in the past decade. No change in the trend is in prospect, he commented, and 'at the present rate of filing, the increase for the current fiscal year will be another 10%.'

Predicting a rise in filings for the current year to about 170,000, Mr. Jedlicka said bankruptcies in the final six months of 1961 totaled 72,769. The number of wage earner bankruptcies in fiscal 1961, he added, amounted to 19,723, a 45% increase from fiscal 1960.

—Wall Street Journal

WHAT SHALL THE YOUTH BE TAUGHT

Our officials and leaders of public opinion feel the immediate need for only one kind of technician, namely rocket experts. Insofar as they are concerned, the only important social problem on this Continent is that of catching up with the Russians in the field of rocketry and missiles.

FOR SEVERAL years now, it has been known in America, at least among those who do any serious reading and listening at all, that the educational system of Russia is superior in quality and effectiveness to that of the United States. But, until recently, the tendency here has been to brush this knowledge off as being of little moment. The general attitude of our leaders has been something like this: 'We in America are not able to use to the fullest the knowledge and training we already have, so why bother with educating more people or educating them more thoroughly? Too much education is dangerous, anyway, particularly that education which places emphasis on material things; for one thing, it causes people to think too much about things that shouldn't be thought about and to question the old established values. For another thing, it would flood the country with too much intelligentsia and depress the market value of higher education. So, what if the Russians do educate more people and do it more thoroughly than we, where will it get them? Russia is so backward it won't be able to use its trained intelligence anyway.' Mr. John Foster Dulles has been careful to point out that the United States leads Russia in divinity schools.

The sputniks shattered many of these beliefs overnight and created a near-hysteria among the would-be leaders of our society; but the politicians were scared most of all. The reaction was a mental flip-flop in the opposite direction. The new clamor insisted that the American people should have more education and get it quick—in order for us to keep up with the Russians, nothing else. Nobody seemed to know what kind of education was most needed or what to do with it if we did have it; except that one thing was certain, we must have a lot of rocket technicians and have them immediately. The reasons given for this were either too vague to be intelligible or they were asinine. The reasons given by the politicians were the silliest of all; they were, in effect, that we must be ready to annihilate the Russians at the same time they annihilate us.

That is some goal for an educational program! But it was voiced by both Republicans and Democrats; by reactionaries, conservatives, liberals, and political nondescripts. (We don't know what the radical viewpoint might be since no radical politician has been permitted to emerge in America for at least a generation.) The politicians know that they themselves are all blubber and bluster, with little technical knowledge of the world about them; and that, if a technical emergency should arise, they would be helpless to do anything except rant and scream about the failure of the engineers to handle their flunky jobs effectively. To people like Nixon, Knowland, Dulles, Johnson, Truman, and Charles 'Engine' Wilson, scientists, engineers, and technicians are useful in their place, but that place is not up among the 'respectable' people. Any scientist or engineer employed in government service or in big business soon learns the significance of this attitude.

The politicians, businessmen, and socialites exhibit a fear and disdain toward the technically-trained people. They refer to them by various pet names, none of which are intended to be complimentary, such as: 'longhairs,' 'eggheads,' 'brains,' 'technocrats,' or 'materialists.' They admit that the technical men are needed to handle certain specialized jobs, but their function is really to serve as 'stagehands' for preparing the props for the truly 'important' dramatists in our society. But they feel that the technical people are not to be trusted with matters of social decision or even worthy to be invited out in the Best Circles. A strong point is made of the fact that some scientists and inventors turned out to be failures in the business world. After all, according to the standards of our time, if they're so smart why didn't they get rich?

How many technical men under the American system are able to make upwards of $25 thousand per year? Yet, that is the base pay of a Congressman, and any successful businessman can make double that amount. So, you see, a scientist can't be very important. But they are needed to keep the wheels of industry turning so that the very important people can continue to keep up the pretense of being important. Further, they should not be encouraged too much lest they come up with some new idea or principle that will invalidate the old values and old virtues. Truly, the demons turned loose from Pandora's box must have been scientists.

With such a background of attitude toward scientists and technicians, the present leaders are perturbed immensely by the prospect of America's having to catch up with the Russians in technical training and general objective education. That is a social goal which is entirely at variance with their heart's desire, which is closer to a society wherein the major social goal is making money.

Our officials and leaders of public opinion feel the immediate need for only one kind of technician, namely rocket experts. Insofar as they are concerned, the only important social problem on this Continent is that of catching up with the Russians in the field of rocketry and missiles. Rocketing has suddenly become fashionable. For example, in the parochial schools (where any kind of science has been avoided like a plague) there is now a big splurge of student experimentation with rockets.

Whatever America's educational needs are for the immediate future, we are assured that it involves the expenditure of large sums of money, a large expansion in the number of new buildings, and an increase in the number of political appointees to help 'administer' the program.

Sloppy Education

The major emphasis of Education in the United States has been on liberal arts. The technical subjects have been strongly discounted and often neglected altogether. Only a small percentage of the high schools give any adequate training in science subjects; practically none give basic training in the scientific attitude or train the students to make accurate and precise recordings of their observations and to derive the permissible conclusions therefrom. As a consequence, the sloppy education obtained in high school often becomes a handicap rather than a help to the student going on into some special field that requires objective observations, clear and accurate evaluations of data, and precise, coherent recording or reporting. In a society that is as dependent on technology as North America, the accumulated effect of all this is catching up.

The American education system turns out artists, journalists, actors, and go-getters; but only a few of high quality, even of these. As a consequence, a high school education is not much of a recommendation for a person seeking a function of responsibility in the United States. Its chief function is to 'prepare' teen-agers for entry into college, an objective which only a fraction of them pursue. As for preparing them for making a livelihood, it fails there too; most young people leaving high school need special on-the-job training to qualify for any kind of skilled occupation and for most semi-skilled jobs.

Strict Discipline Decried

The 'modern' educational theories decry strict discipline in the schools, particularly anything that can be construed as punitive in nature. Hence, the teachers and supervisors are helpless to enforce orderliness of behavior in the classrooms or on the school grounds; and the rowdies are quick to take advantage of the situation. The busy-bodies, the do-gooders, and most parents become aroused to wrath at any report of strict discipline or restraint being imposed on children in public schools. The 'dears' are not supposed to be 'treated like animals'; after all, they are 'human beings'! But any biologist knows that children are, first of all, animals, and that the human part is only a biological efflorescence.

No one who is interested in training animals, would think of letting them have full freedom of choice and action. In animal-training, discipline is simple, direct, and inevitable. But, on children, you are supposed to use 'psychology.' In practice, this usually means employing some subtle, roundabout technique of persuasion, often deceptive in nature. It is a technique of approach which is analogous to the 'Birds and Bees' approach of education about the 'facts of life.' But most mothers who have tried applying the ruses of 'psychology' to the process of feeding their young children, for example, will tell you that the little rascals can keep one jump ahead of the adult perpetrators in their wiles and stratagems.

Most private and parochial schools still are devoted to a regimented form of discipline, much of which serves no significant purpose. In these schools, the pupils who are incorrigible are dumped out onto the public schools, where they amplify the disciplinary problem that already exists there. The result is a deterioration in the reputation of the public schools as a fit place to send children for an education; and this is not entirely unintentional: it helps promote business for the non-public schools.

We are not attempting in any way to advocate discipline in the form of goose-stepping regimentation, which is so characteristic of military academies. Most of that type is stupid in concept, execution, and objective. It has a place only in show business, where strictly coordinated group movements are executed for artistic effect. A closer approach to effective discipline is achieved by the better athletic coaches, who can get their charges to exert themselves to exhaustion and come back for more. In this case, the goal is superior achievement; if you make it, you're a hero; if not, you're a washout.

Accepted Function at School

One factor adding to the handicaps of the teacher in the schools is the lack of a student interest in a goal to be reached by the subjects taught in the schools. Too often, the accepted function of the school and the teacher, insofar as society at large is concerned, is that of providing detention for the youth during its most rambunctious periods of life, freeing the adults from distractions and annoyances from this source for significant periods of the day and year. On the other hand, the children are supposed to welcome the opportunity to get away from their parents and mingle with others of their own kind, and maybe learn something that may be of use to them at a later date. A contributing factor to the listless attitude of the students toward their school subjects is their observation that what they learn in schools appears to have so little application to later life, as judged from observations on the lives of their parents. Their attitude is, why go through that 'phase' of life it it's not going to be useful later on? A counter argument is that training in one subject develops habits and skills which can be carried over into other, more practical subjects. This belief, however, turns out to be more superstition than fact.

Another factor which tends to stultify the educational system is the abject fear on the part of adults and partisan groups of controversial subjects being discussed in the schools, particularly controversies prevailing in the present society. Debates must be limited to very narrow and harmless discrepancies of opinion, such as: Which has contributed most to the advancement of civilization, the horse or the cow? What school would dare sponsor student debates on such fundamental controversies as: collective designed direction versus private enterprise; functional control versus political regulation; militarism versus pacifism; agnosticism versus faith; or even marriage versus free love?

The Search for Adventure

The very young child is full of desire for activity and is vitally charged with the spirit of adventure. But where in practical life are there outlets for children's internal energy and opportunities for adventure? Out of desperation, they wander off into a make-believe world, often of ancient vintage, where people 'had real opportunities' for adventure. They tend to emulate and imitate the exciting lives of certain legendary hero types, such as American Indians, Pioneers and Cowboys. Formerly, in Europe, the search for adventure led to childish imitation of the heroes who lived in the days when knights wore armor and went about capturing (beg pardon, rescuing) fair maidens from other captors. The American youngster is more devoted to the heroes of this Continent, in spite of attempts to glamorize foreign bandits and professional fighters, such as Robin Hood and Richard the Lion Hearted. The very young generation may also seek an outlet in the emulation of some contemporary hero type men of action, such as firemen, engine drivers on the railroad, policemen, soldiers, gangsters, pilots. Or they may escape imaginatively into the future, where they can become spacemen. Or they may like to think of themselves as some sort of superman, always a favorite subject of reverie for youngsters of all ages, a concept which was given impetus and specific definition by the stories of Tarzan and, later, by an array of cartoon characters, beginning with Popeye and proceeding through an array of supermen to that acme of all supermen, Superman himself.

Young animals go through similar stages of development, preparing themselves through play and make-believe for a more serious and severe life ahead as adults, although they are not aware of such goals. They have the advantage over children of being guided in their activities by instinct, which is supplemented by imitation of others of their kind. Further, their juvenile play bears a close relationship to the adult patterns of activity they will be called upon to follow later.

Among primitive people, the activities of the young human animals are essentially direct training for adult patterns. They may play at hunting, fishing, stalking wild animals, climbing trees, and defeating enemies, the particular emphasis depending on the circumstances of tribal life. But what adult pattern is there for the young American to play at? Playing at working in an office or at a factory job is hardly suitable to his dynamic nature at that age. Playing at housekeeping and motherhood for the young girls may be closer to life but still does not fulfill the need for active adventure. Watching thrillers on television may be a vicarious substitute of a sort but deprives them of real and active participation. The commercials on TV, as stupid as they are, often come closer to the real life of the child than do the dramas slipped in between the commercials. Outside of swaggering around in out-dated costumes and brandishing weapons of a bygone age, there is little adventure in life for the suburbanite youngster. The circumstances do not permit his carrying childhood dreams and adventures over into adolescent and adult life. They are expected to make a complete break with their childhood as they grow up, which is something many of them find difficult to accomplish, and the society is plagued with adult juveniles.

Too Many Adults

For the older youngsters, there may be membership in the Boy Scouts or Girl Scouts to provide alleged adventure. The principal trouble with the Scouts is that there are about a third as many adults in the organization as juveniles, with the inevitable result that scouting is a farce. In the first place, scouting pretends to emulate the life of a remote generation, which would not be so bad in itself if it were treated with seriousness as a means toward developing self-reliance and endurance. But whenever anything starts getting rough, for example the weather, the Scouts are quickly supplied with provisions, or rescued, by helicopter. Further, the Boy Scouts and Girl Scouts are given a thorough indoctrination in adult superstitions, rituals, and phoney virtues. Under these circumstances, what chance do the juveniles have for adventure?

The competition among Scouts for 'merit badges' is undoubtedly the worst farce of all, providing more of a training in dishonesty and deception than in achievement. (We were once called upon to serve as judge in certain merit badge tests; and, even after being as generous as possible in making decisions, had to turn down some four out of five applicants on the average. Needless to say, our services in that capacity were never required again.) In recent years, Boy Scout jamborees serve in major part as a means of gathering together large numbers of boys for commercial proselyting purpose.

In adolescence, sex adventures tend to take predominance over other interests, outrivaling even sports and swashbuckling; but the mores of the community are so 'crazy and mixed-up' in this area of interest that as often as not sex adventures lead to 'delinquency' rather than to 'adjustment.'

Quickest Way to Learn

The quickest and most effective way for one to learn something is through being faced with a problem requiring that particular knowledge for its solution. Children will work with energy and enthusiasm, either alone or in groups, to accomplish something of interest to them, such as building a shack, making a boat, digging a cave, decorating a room, solving a puzzle, or raising a pet animal; and they will make a special effort to learn the knowledge required in that accomplishment. In that context, knowledge and training seem to 'make sense.' On the other hand, they can memorize and recite prescribed lessons under compulsion, but that is not where their enthusiasm is. To them, action and knowledge go together. Another advantage to them of working out solutions to interesting problems is that it keeps them in contact with reality. For example, flying a kite is quite a different experience than planning an imaginary trip to Mars in a Flying Saucer. For the former, you must have some knowledge of nature—of energy and materials and how to manipulate them toward a specified result.

In adult life, one does not acquire knowledge by sitting in a chair and trying to think of something or to induce an inspiration. It is doubtful that much primary knowledge can be acquired by sitting around a conference table and engaging in discourse, or from academic study. The lasting impressions and the real understanding of things come from direct and personal observations of reality, supplemented in turn by inquiry, discussion, and cogitation, reinforced by a return to direct experience with things and events. It is true that some people can comprehend much from only smatterings of experience while other people could travel around the world and learn practically nothing. That is a matter of individual differences and capacities.

What to Teach

Now, let us come back to our basic question, what shall the youth be taught?

First, let us propose that they be taught to get around in the environment in which they live; in other words, learn confidence and self-reliance. In this category, we would include the knowledge and experience required to look after one's personal needs and to use the services and facilities provided by the society; we would include the knowledge and experience required to get around in the Area, to find companionship, to find information, and to avoid dangers. This phase of education is not a conscientious part of the present educational system, at least not above the kindergarten level. The children and adolescents learn in a haphazard way to get about, but far too much of it is left to their own initiative and discovery. This is not intended to imply that they should be kept under the supervision of some 'mother hen' adult but, rather, that the essential knowledge should be made readily available to them and that facilities for their convenience be provided.

Second, let us propose that the youth be disciplined in social living; that they be taught the restraints, the amenities, and the respect for others essential to living harmoniously with other people. Let them be taught the advantages and techniques of mutual aid and cooperation. And let them learn that the show-off, the braggart, and the conceited person are more likely to be bores than heroes in a social group. We may very well begin by teaching the very young that, while personal dramatics and tantrums may have special uses in life, they do not have a place in 'everyday life.' This is one field of training that appears to be noticeably neglected with respect to the latest crops of young Americans.

Third, let us propose that the youth be taught the facts of nature and a basic understanding of the phenomena in the world around them, free of superstition, legend, and folklore. For example, let them learn about astronomy free from the legends of Greek mythology. Let them also learn about the nature and origin of rocks and their classification. Let them learn something about the structure and physiology of plants and animals and something of the different kinds. Let them learn about matter and energy in their different forms and manifestations, including a generalized briefing on nuclear energy. For the curious, the world of nature can provide an endless adventure.

Fourth, let us propose that the youth be taught much about the geography of the world, including the circumstances of human life on various parts of the earth; that they be taught, with particular emphasis, about the geography, the resources, the industry, and the ways of life on this Continent. Let this study of geography be supplemented by a study of history.

Fifth, let us propose that they be taught the fundamentals of the social operation of the Area and about the ways in which goods and services are provided. Further, let them be taught the need and responsibility of their finding a place of function in the system and preparing themselves for it.

And, sixth, let us propose that the youth be taught to employ their free time in ways that are satisfying to them individually and at least harmless to others and to the society. In this field would be included development of artistic talent, which for the most part would be used as a means of subjective expression. Only when talent and training are demonstrably outstanding should artistic expression be viewed as worthy of public attention or as constituting a vocation. There are many other ways in which the individual can find personal satisfaction and 'fulfillment' in his free time. (Let those with blue-nosed moralistic tendencies find fulfillment in their gnashing of teeth at the sight of others enjoying themselves.)

Teaching Rocketry of Little Importance

You may note that we have mentioned nothing about teaching the youth to successfully fire rockets into space. It is because we have not considered it very important in the full context of an educational program. For the same reason, we have said nothing about preparing to charge enemy soldiers with fixed bayonets, or watching the skies for enemy planes, or learning the techniques of eliminating fallout from the premises. But there are a few other things that we would like to discuss a little further.

Those students of exceptional intelligence and initiative should be given every opportunity to progress into fields of advanced study, including, in the 'opportunity.' subsidization by the society, while at the same time the dullards should be sidetracked at an early stage into channels more suited to their limited abilities. In this phase of the educational system, it must be recognized that people of advanced intelligence are more capable than the average of making independent decisions and judgments, that they do not require the petty supervision and prescribed regimen that are usually essential to fitting a moron into the society, and that they are less tolerant of repetitive routine. They need the stimulation of association with their peers and some prompting if they are inclined to be lazy; but regimentation of action is not for the intelligent. And, certainly, they should not be placed under the authority of 'laymen,' such as politicians or business administrators.

Principles of Realism Important

In the field of national and international affairs, it is urgent that the youth be taught the principles of realism. For example, that the United States is only a small part of the earth; that there are other people in the world with needs, desires, and abilities similar to our own; that the United States does not have a divine right to plunder the rest of the globe of its resources. They should be taught that North America's destiny lies in the consolidation and coordination of the Continental Area into a social unit, and that it is not our place to dictate the ways in which other areas shall develop their destinies. At the same time, this Area can exert its influence toward the eradication from the earth of certain social patterns which are repulsive to mankind in general. The people of the world have already acted against bonded slavery, and the few remaining pockets of it are due for early extinction. We could very well declare our intolerance of fascism, which is so cruel and inhumane in its operations and repressions that it has no place in modern life. Warfare is another thing we can take active steps to outlaw.

At present, there is much advocacy of a stepped-up program of education, involving heavy expenditures of money for new buildings and equipment, for more and higher-paid teachers, for lush administrative salaries, and for subsidization of chosen students. But this emphasis on spending money is not as important or necessary as the clamor for it would indicate. A much more efficient and effective educational system probably could be managed at even less cost than at present.

There is no sensible excuse for not utilizing the buildings and facilities we now have on a 24-hour per day basis, using the same buildings for three or four shifts of students each day. The buildings have to be heated and tended all the time anyway, so that cost would not be materially increased although the load factor would be multiplied. With a standardized curriculum for the whole Continent, and with the use of television, radio, and motion pictures as significant adjuncts to 'live' teaching, the number of teachers would not have to be greatly expanded, if at all. The present high cost of education is only one facet of the general inflation and inefficiency of the Price System. The educational system and techniques are due for a major overhauling from top to bottom.

The first and most important part of this overhauling should consist of a program of what shall be taught—a program which is in conformity with the reality of the present situation and with the social requirements of this Continent. And this should be decided on the basis of the functional needs and general welfare of this Continent and not on the basis of 'catching up' with someone somewhere else on the globe.

—Reprinted from The Northwest Technocrat, April, 1958

Five years ago, shortly after Sputnik I was launched, we began a crash program to get more education underway for our youth. The major emphasis was in the field of rocketry. What type of educational reorganization will mark the event of two manned spaceships of Russian origin circling the globe in tandem for three days, is hard to speculate on. Our efforts in this area over the past four years, in spite of being frantic, look ineffective and puny in comparison. However, we can not let ourselves be dragged into a race for outer space and the enormous waste of natural resources that goes with it. It becomes immediately apparent that what Technocracy has outlined for Continental Education must be installed, and *soon*, if we are to retain our leadership in the world as the number one technological area.

A NEW AXIS TAKES FORM

West German efforts to make an agreement with Spain for supply bases and training areas in that country, following President de Gaulle's effort to bring Franco Spain into Europe, and his strong personal relationship with Chancellor Konrad Adenauer have made left and liberal circles wonder whether this could be the beginning of a Bonn-Paris-Madrid axis oriented toward Rome.

It is pointed out that:

1. Generalissimo Francisco Franco is an absolute dictator, General de Gaulle now has nearly the same powers in France, while a democratic West Germany in official structure is, in fact, so dominated by Dr. Adenauer that it has become, in effect, nearly as authoritarian as France and Spain.

2. Each of the three leaders is a dedicated Roman Catholic. General Franco long has proclaimed Spain's deep desire to serve the church. General de Gaulle has recently proved his attitude by upsetting a 50-year church-vs.-state peace in France in order to railroad a new law giving state money to church schools against very strong public opinion.

Dr. Adenauer, in a recent interview with the Pope, is reported to have told the latter with deep feeling that he believed God had given West Germany a special mission to protect the Roman Catholic West against communism—an undiplomatic remark that was not included in the official Vatican communique of the meeting but was confirmed by officials and became the subject of biting comment by Premier Nikita S. Kruschev in his latest correspondence with Dr. Adenauer.

3. General de Gaulle and Dr. Adenauer joined forces at once when the former came to power to establish a strong personal relationship in the name of French-German friendship. There are indications that General de Gaulle's dislike of the North Atlantic Treaty Organization has somewhat influenced Dr. Adenauer's own attitude to that organization.

4. Under the bitter criticism of the Spanish deal, West German Defense Minister Franz Joseph Strauss has strongly denied that he originated the idea.

Despite strong warnings from Britain and the United States including the NATO commander, Gen. Lauris Norstad, that any such negotiations conducted outside of NATO itself would bring strong reactions, Herr Strauss went ahead just the same. This strongly suggests the idea may have been originated by Dr. Adenauer.

The strong reaction of left, liberal, and many center elements is understandable in a Europe which paid a very high price for submitting to fascism and National Socialism, and which has felt frustrated at seeing Hitler and Mussolini go down only to have Franco escape, survive, and now even courted *by a presumably democratic Western Europe.*

Such a reward for the surviving member of the former Berlin-Rome-Madrid axis is hard to take for these long-memoried Europeans.

The same liberal forces are additionally sensitive because in the effort to build the new 'Europe of six' over the past decade there was much concern during the first years lest the Christian Democrat or Roman Catholic parties of the six nations combine under Vatican influence to dominate the new Europe.

As events turned out the idea of the Rome-directed, closely-cooperating Christian Democratic movement failed to take over Europe, due to the wide differences which came up among its many political leaders.

It was then considered the risk could be averted if the full support of the trade unions, socialists, liberals, and independents could be brought into the European unification scales. *This was done* and the new Europe has blossomed, *until now without any apparent signs of domination by political Roman Catholic influences.*

The sudden disclosure of what would seem to be an Adenauer-de Gaulle-Franco cooperation, with the kind of 'Europe' it suggests, has naturally caused a rude awakening. The response has been rapid because of the already great uneasiness in France at having to give General de Gaulle such authoritarian powers to clean up the Algerian situation.

Naturally to have Dr. Adenauer start a deal with General Franco can only raise old apprehensions of a new German authoritarian hookup with the former Hitler authoritarian partner in Madrid.

—Christian Science Monitor

TECHNOCRACY IN THE FIELD

The Members of Technocracy apply their efforts in various ways to bring to the attention of all North Americans the significance of the present social trends and the need for a technological solution to the problems which arise out of them. They realize that only through their activities and efforts is the public made aware of Technocracy's Program.

A Technocracy Gray Car never fails to attract attention of both motorists and pedestrians. The sporty Technocracy Gray Jaguar XKE in the picture is a double attraction and recently rated mention by a Seattle newspaper columnist who made favorable reference to Technocracy when remarking about the car.

In the Northwest, a wide variety of automobile makes and models are adorned with the rich, distinctive Official Gray of Technocracy, and the Monad Insignia.

Symbolization of the idea, Technocracy, through Official Gray Cars is one of the most effective means Technocracy has to arouse curiosity and interest in its Program. Often, the Gray Car driver is asked questions by interested persons, and usually literature is requested at the same time.

Technocracy Inc. regards its Gray Cars as invaluable assets in the turbulent social change now generating on this Continent. Those individuals who are capable of understanding the problems common to all of us are beginning to look around for answers. The highly effective but unostentatious Gray Cars will attract the eye of anyone who is alert to his surroundings. Thus, the association of the visual image of Technocracy's Monad Insignia and the idea of Technocracy is established.

Sooner or later, the curious individuals among us ask the driver of a Technocracy Gray Car for some information. With hardly any effort, the Gray Car driver is able to single out the individuals who may be capable of entertaining a new idea. These are the kinds of people who will count heavily in North America's social change. They are worth the small amount of effort and cost it takes to paint a car Gray and apply the decals of Technocracy — and then some.

Threat Greater Than Bombs

Dr. Georg Borgstrom of Michigan State University's department of food science states he sees no hopes of conquering hunger unless world population is controlled, and 'even then it will be a close thing.'

INSPECTING the world's scant food cupboard, a scientist ominously warns:

There's not enough food now to feed the world's three billion humans — yet this population is expected to double in 40 years.

The United States and some other countries are lucky. But one reason they eat so well is they import food—including fish protein in meal to feed to chickens—from nations where many humans are malnourished and lack protein to keep them productive.

The 'food gap' is a bigger threat to civilization and peace than H-bombs, germ warfare, and intercontinental missiles.

And, says Dr. Georg Borgstrom of Michigan State University's department of food science, most proposals to solve the food shortage make only a small dent in the total problem.

More money is available to study how to feed future space travelers than on how to feed nearly two billion hungry people, he adds.

Dr. Borgstrom declares we ought to seek disarmament, but a greater, more urgent need is 'for a gigantic rearmament to wage the sinister war for human survival' by providing enough food 'to give the human race a future.'

From his analysis, he concludes:

'If all the food of the world—including surplus stores—were distributed equally and each human received identical quantities, we would all be malnourished.

'If the entire world were fed on the U. S. level, all available food would be only enough to feed less than half the human race.

'The world as a global household knows of no surpluses—merely enormous deficits.

'Yet every month we are adding to the world the population of a Los Angeles (4½ million) and every fourth year more than an entire United States (180 million).'

Swedish-born, Dr. Borgstrom has traveled on several continents studying food problems and in five languages (Swedish, French, English, German and Spanish) can assail what he calls 'the great calorie illusion.'

This, he says, is that the world can produce enough calories from land and sea to feed everyone now, and for long in the future.

'But, if calories were all that counted, the U. S. corn acreage alone could supply enough calories for every American. And if the total U. S. tilled acreage were devoted to sugar beets, there would be enough calories to feed everyone in the world.

'It is not that simple. People wouldn't get the protein and minerals they need, and millions don't even now.'

Americans individually not only eat more total calories than do, say, the people of India, but they also feed a huge amount of calories and protein to livestock and poultry to produce high quality protein. In this total expense of calories, each American accounts for 11,000 calories per day (about 7,500 or so fed to cattle and poultry) versus 3,000 for each Indian and all the livestock in that country.

In primary protein consumption by humans and animals, 200 million persons in the United States and New Zealand consume an amount 'equal to that peddled out now to no less than 1⅓ billion of the low-consuming group in the world.'

Counting the consumption of food by animals—including those used for transportation, like oxen in India, rather than for food—the world food supply now is supporting the equivalent of 15 to 18 billion humans.

Yet, says Dr. Borgstrom, 'some people say the actual world population of humans could go that high, and there still would be enough food. It is impossible.'

Dr. Borgstrom worries about a 'hunger curtain' dividing the world. The exclusive food club, he says, consists of Americans, New Zealanders, some 200 million well-fed Europeans, and some 15 million persons in Oceania. On the wrong side of the hunger curtain are two billion humans, with 600 millions perched on the fence. And 'partly because of hunger, half of the one billion children alive right now throughout the world will never reach adulthood.'

The United States, he adds, 'won the prize of enormous resources far greater than any nation in human history. We have at our disposal 2.6 acres to feed each citizen. We can afford to keep cattle, hogs, and poultry in quantities that consume an amount of protein sufficient to provide 1.2 billion humans with their human needs.'

'The Japanese must manage on one-tenth that acreage. For protein needs, their agriculture feeds only 26 of their 96 million people. Fisheries take care of 44 million. Japan imports the protein needed for the other 27 million.

England imports half her protein needs, he adds. The United States imports about one billion pounds of meat a year, and more than half of all the fish and seafood Americans consume.

For health and productivity, 'the world desperately needs high quality proteins, and at a cheap price.'

Fisheries can be expanded, 'but even doubling the ocean's production—which is about the limit—would not do all the job even for the present world population.'

The Soviet Union has taken the lead in developing ocean resources for protein to feed her people, and Russia, despite her farm troubles, is on the right side of the hunger curtain, Dr. Borgstrom says. Red China is not.

Food is being exported from African countries and South America 'at the cost of the health and basic foods needs of the working people, and when they become undernourished, the economy is sick.'

One-fifth of the world's catch of fish, constituting an important protein source, now goes to feed poultry and livestock to give Americans high quality protein in eggs, broilers and pork chops.

'One-sixth of the protein from the Pacific Ocean goes to feed broilers and livestock in North America and western Europe,' Dr. Borgstrom reports. 'If it were consumed in Peru and other countries where the fish are caught, that would raise the animal protein intake of the whole of South America above that of people in the Mediterranean region.'

Protein from soybeans, sunflower, peanuts, cottonseed and other plants is one great hope of raising the protein standard of hundreds of millions of people, Dr. Borgstrom declares.

Oceania is turning from being a food bastion for Europe to a food resource for Asian countries, using more of her own production to feed her own hungry. That, he thinks, 'is fortunate for the chances of peace and democracy in those areas.'

Dr. Borgstrom says he sees no hopes of conquering hunger unless world population is controlled, and 'even then it will be a close thing.'

Well-fed countries had best realize how much they are dependent on food imports, and that their food standards can go down if imports are cut off, he warns.

The well-fed world can't just go on talking about the necessity of ways to feed themselves on foods of the future like soup from algae, grass pudding, or rice possibly spiced with a beefsteak processed from sawdust and wooden chips, he says.

'All of us have got to start realizing what things really cost in terms of the world's limited resources, the cost in terms of water, land, calories and proteins and soil depletion.'

—The Sunday Oregonian

SWEETER SOUNDS WITH SEMANTICS

Washington politicians seem increasingly intrigued by euphemisms, like 'senior citizens' for old folks. So perhaps they would find useful a suggestion dropped the other day by a Maryland State health official, Robert M. Brown.

Mr. Brown told the Maryland Municipal League that public health people can accomplish more when they speak in positive terms instead of using hackneyed, negative-sounding phrases. For instance, he said that 'water quality control' has a more positive ring than 'pollution control.' Further, municipal waste ought to be called 'spent water' instead of 'sewage.'

Now surely the government should find this idea stimulating. How about that bad old term 'Government spending'? How much better it would be, and how much more accurate to say instead 'wealth distribution,' or 'resources re-allocation.'

Or take that very, very bad word, 'deficit.' How much more soothing to call it a 'minus adjustment.' And 'tax' is especially unpleasant. It might have much less sting if replaced by something with the grand blandness of 'citizen investment.' Which a tax isn't, of course, but that's quibbling over details.

We think the Administration is missing a bet if it doesn't grab Mr. Brown and make him its Semantics Coordinator forthwith. For as he said, changing the language makes things sound better, even if it doesn't clean them up.

—Wall Street Journal

—Let's all engage in self-hypnosis and imagine that the whole mess we're in smells like Chanel No. 5. After all, this is one way we could demonstrate the power of positive thinking; even if it doesn't solve anything.

MY TWO CENTS WORTH

This afternoon Uncle Zeke was about as worked up as I ever seen him. He was talking with some of his cronies about the Cold War and the chances of a big war with the Russians. One of the men got things going pretty hot by saying we shouldn't even think about fighting the Russians but should do all we could to join up with them. The way he had it figured out was America and Russia are the two biggest countries of white people in the world. If we get to fighting each other, it will mean that we're just going to kill off most of the white race and make it easier for the colored people to take over the world. It won't matter much which side wins the war, because somebody else will rule the world anyway.

I tried to tell him not to worry about it too much, because there are a lot of smart colored people in the world and they might do a better job of running things than the white people have. I heard somewhere that the Chinese had a big civilization going when our ancestors in Europe were still living like savages. But that didn't seem to help him any. He's one who has always thought white people are better than anybody else. And this is a new angle to the Cold War which he hasn't thought about. I guess some of the other men were disturbed too from the way he talked.

As I see it, all kinds of people ought to stop worrying about which ones are going to run things. Instead they should get together and make sure the bugs don't take over the world and run all the people off.

—Ima Moron

PLENTY OF JOBS

As between five and six million Americans search vainly for work, we note in the large city daily papers that there are plenty of jobs, if you are qualified to fill them. On a typical day large industrial concerns advertised for a:

Plasma physicist, to perform research in magnetohydrodynamics in its application to space vehicle propulsion. Advanced degree required;

Theoretical aerodynamicist, to work in connection with MHD power generation with strong interest in fluid dynamics. Advanced degree required;

Senior engineer, superconducting coils, to perform systems studies for the use of superconducting coils for various applications;

Senior engineer, electrode development, in the research and development of electrodes, and the solution of slag and erosion problems . . .

The paper offered further opportunities in the fields of magnetic resonance, pyrotechnic circuit design, cryogenics, hypersonic gas dynamics, absorption systems research, space sensors, nuclear gyromagnetic resonance and electromagnetic theory and antennas.

Doubtless, any one of the foregoing fields of work would be challenging, highly interesting and well paying to those individuals who could qualify for consideration. However, Technocracy points out that only a small percentage of existing engineers and scientists could meet the particular requirements of these jobs. Where does this leave the fellow who has no particular skill to sell, or who perhaps once had a skill that is no longer required because of technological change?

The haunting fear of the Price System is that North Americans will get wise to themselves, politics and business, and say 'to hell with this idea of trying to work for a living. I can't compete anyway. Let's get organized to live without working.' On the day North Americans come to these conclusions, this Continent will be on the way to a new and brilliant future. Technocracy is here to show the way.

●

ROBOT WILL DIRECT TRAFFIC

The traffic flow along a heavily traveled section of Sunset Boulevard in Los Angeles will be controlled by a digital computer system beginning this spring.

First of its kind to be installed by any city in the nation, the system will regulate 26 signal lights on Sunset and 10 lights on approach streets from a control center on the tenth floor of City Hall.

City Traffic Engineer S. S. Taylor said Sunset Boulevard was chosen for the test because it is a major thoroughfare and an important bypass for a heavily traveled section of the Hollywood Freeway.

The computer will receive traffic volume and movement information, transmitted by telephone lines from automatic detectors at the borders and within the controlled section of Sunset.

—Metropolitan Transportation

TRUCKS ASSEMBLED

CAPETOWN—Toyota's Toyopet trucks are now being assembled by Motor Assemblies, Ltd., of Durban, South Africa.

—Seattle Times

TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in North America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $9.00 which are paid by the member to his local Section. Members wear the chromium and vermilion insignia of Technocracy — the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses, or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every state in the U. S. and all provinces in Canada, and in addition there are members in Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the nearest Technocracy unit.

WHO?

Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to North American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife — so long as you are a patriotic North American — you are welcome in Technocracy.

Pamphlets

Introduction to Technocracy	**25c**
America Must Show the Way	**15c**
Our Country Right or Wrong	15c
Continentalism—The Mandate of Survival	15c
I Am the Price System, and The Culture of Abundance	15c
Man-Hours and Distribution	**15c**
The Energy Certificate	**15c**
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TECHNOCRACY

(A)—Social phenomena are measurable and the laws of social control may be derived from these measurements.

(B)—The application of the machine to the production of goods and services has made it impossible to measure the value produced in terms of any single commodity (gold for example) and thus the engineer has destroyed the Price System.

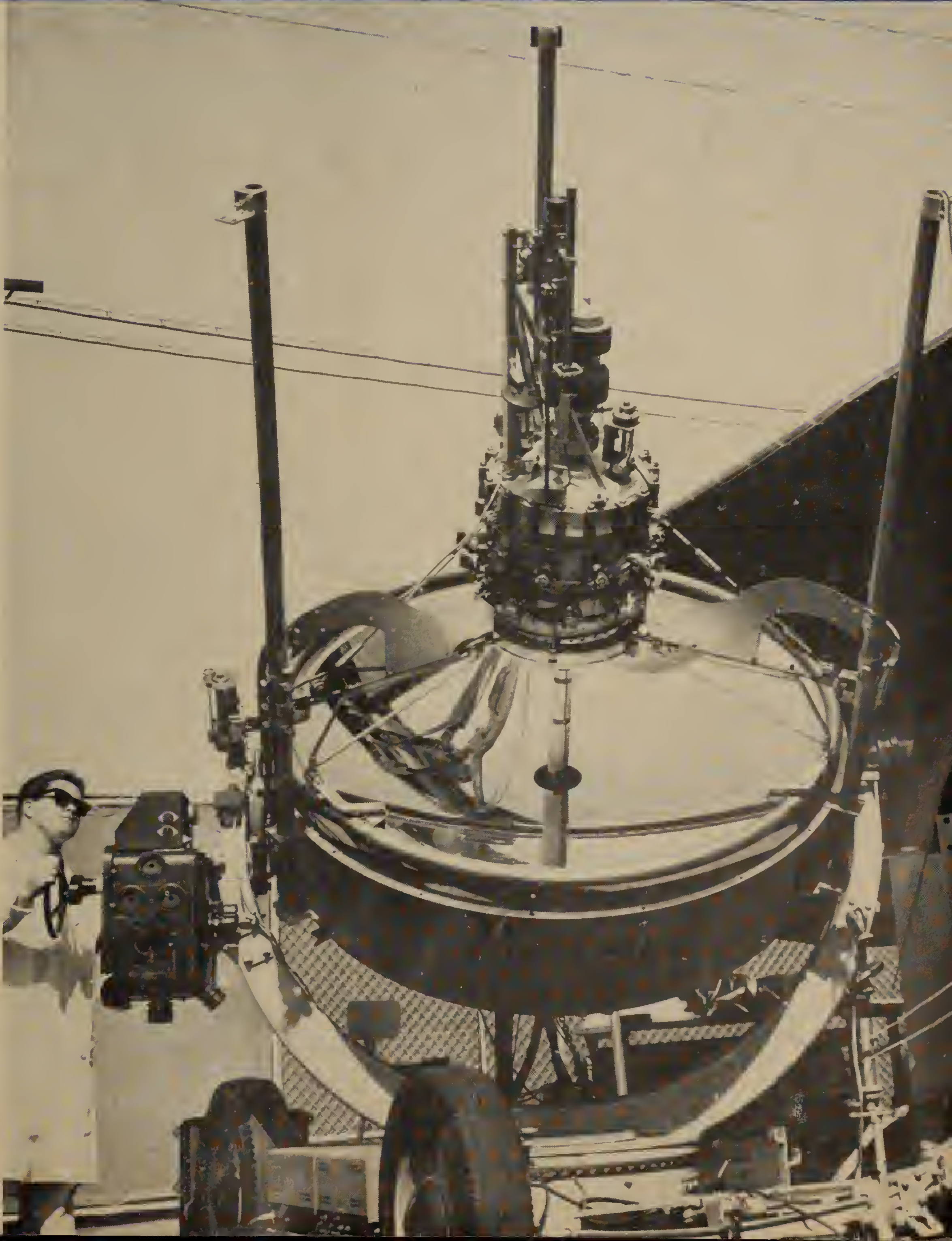
(C)—The expansion of credit, sometimes termed the creation of debt, under the capitalistic system has disturbed the relative claims of capital and labor to the goods produced to such an extent that the Capitalistic System has already collapsed.

(D)—The economies of the social order are too complicated to be understood and controlled by politicians. Control should be placed in the hands of engineers and scientists.

—Encyclopaedia Britannica, 1960, page 894

THE NORTHWEST Technocrat

JAN. '63



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- Technocracy in the Press
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TECHNOCRACY INC.
Seattle, Washington

Jesuitical Talk From The White House

President Kennedy cut short a political campaigning tour on the announced grounds that he was sick and his doctors had 'ordered' him to desist. This explanation proved to be not the truth. He had returned to Washington to hasten preparations for a 'preventive war' against the Soviet Union and Cuba. With a national election only two weeks away, some gimmick more potent than political speech-making was needed to arouse the voters enough for them to turn out and exercise their 'rights under Freedom'. (In 1956, the Republican administration had pulled off the ill-fated Hungarian uprising for similar reasons just before election).

In his nationwide radio and television speech, the president alleged that the Soviet Union was using Cuba as a prepared launching site for a thermonuclear war against the United States, and he stated he was using his authority as Commander-in-Chief of the Armed Forces to take preventive measures against such a threat. In effect, the president was saying that the United States would be the first to strike a blow against any nation that was suspected of having the potential capability of someday striking a blow at the United States.

In view of the context of the event, we must hesitiate to accept as valid the appraisal given by the president to the Cuban buildup. (Was it based on another CIA 'intelligence' report?) The hypocrisy of the president was revealed by himself in the same speech, when he also warned Russia against any encroachment upon our own armed base inside Soviet territory—namely, in West Berlin.

We can understand and appreciate a genuine motivation on the part of a country to eliminate potential dangers to itself—within the limits of its national capability. Technocracy has long advocated Continental Defense for the North American Continent. But we contend that when the political head of state presumes to represent the sole sovereign power on earth and sets out with a policy of brinkmanship and massive retaliation to back up that presumption, he is taking in too much territory.

The jesuitical language of calling an act of war by the Armed Forces a step toward preserving the peace indicates how slippery are the ways of the man in the White House. Further, the taking of unilateral bellicose action belies his protestations that he is acting in concert with a 'community of nations.' When 'peace-loving' governments have to be bludgeoned into acquiescense to warlike acts, after the fact, it can hardly be called 'by mutual agreement.'

The year 1984 is still some time away, but already Big Brother is telling us that black is white; red is black; a blockade is a quarantine; and war is peace. . . . We have, indeed, reached a dangerous stage in our national affairs when the sane people of the world must depend upon the level-headedness and forebearance of the enemy to save the American people (and the rest of the freedom-loving peoples) from the folly of our 'duly elected' leaders.

—Technocritic

•

COVER PICTURE

Solar Thermionic system of Electro-Optical Systems, Inc. uses sun energy captured by reflectors to generate heat. (See article on Page 23 for more information concerning uses of energy from the sun.)

—Photo Courtesy Electro-Optical Systems Corp.

JANUARY 1963

THE NORTHWEST Technocrat

TECHNOCRACY IN THE PRESS

As social change continues to exert increasing pressure on social structures in North America and in the world, the words 'Technocracy' and 'Technocrat' appear with increasing frequency in the daily press, in periodicals, and in books, especially with reference to technological change. The October, 1962, issue of Fortune Magazine carried a picture of Director-in-Chief Howard Scott, for example; and below is a letter by Mr. Scott to the editor of a book entitled 'Automation and Technological Change,' in which he takes issue with certain inaccuracies about Technocracy appearing in that book.

October 4, 1962

Mr. John T. Dunlop
C/o Prentice-Hall Inc.,
Englewood Cliffs, N. J.

Dear Mr. Dunlop:

The volume, "Automation and Technological Change," produced by The American Assembly, Columbia University, and edited by you, has as its first article, starting on page 7, "The Impact of Technology: The Historic Debate" by Robert L. Heilbroner.

On page 14, Mr. Heilbroner used the subtitle, "Technocracy, the economics of depression". At the beginning of paragraph 3 on that page, he states, "purportedly stemming from Veblen's reflections on the machine (of which more later) Technocracy relied for its appeal on the fact that it put boldly in the foreground the predominance of the machine in economic life." On page 15, Mr. Heilbroner further states, "For in fact, the Technocrats, after their obeisance to the engineering nature of the social process, eventually brought their positive proposals to the cluttered shrine of monetary reform. The Technocratic movement blamed the machine for our ills, and then prescribed for the antidote a monetary unit based on an invariant standard of value, the erg. The effect was not a little like suggesting that an ill-organized factory could be put to rights by going on the metric system".

Mr. Heilbroner and The American Assembly seem to be totally unaware of both the historic background of Technocracy and in fact of its continued existence. Technocracy was not born of the depression. It started in late August, 1918, and had its first organized office at 107 Waverley Place, New York City, at that time. It later moved to an entire second floor at 23 West 35th Street and, while it did suddenly burst into public notice in 1932, it was through no effort on our part but on the part of outsiders who smelled the gold of publicity "in them thar hills."

While Thorsten Veblen served on the Organizing Committee in 1920, Technocracy did not originate from any of Veblen's reflections on the economic scene. It derives its first principles from the works of J. Willard Gibbs on energy and statistical mechanics.

In its technological analysis of the operations of a social structure, Technocracy has never blamed the machine for any of our social ills. Quite the contrary, we have always welcomed the design and installation of every new and improved engery-consuming device; in fact, the attitude of this Organization toward the machine has been one of eulogistic response. We realized forty years ago that only

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the machine can produce machines and that machines cannot be reproduced by human toil and hand tools. Machines, of course, produce jobs for more machines but not for human beings. Technocracy has not at any time ever advocated any kind of monetary reform and we are afraid that Mr. Heilbroner, as well as a good many others, has fallen victim to the mass of anti-Technocratic propaganda. In other words, to quote the caption on an old cartoon, he has laid an erg.

In the first line of the next paragraph on page 15, Mr.Heilbroner states, "Technocracy passed, leaving little imprint on academic thought." He seems to have buried us back in the early thirties, but he is not the only molder of public opinion or economic analyst who has written requiems for our demise. Unfortunately, Technocracy not only never was buried; it just didn't die. We have been publishing official literature continuously since 1935 in the form of magazines, bulletins, pamphlets and even books. Our magazines have been in continuous publication since that date We do not object to the literary burial of the Organization and its ideas, but we do think as a matter of historical accuracy there should be some recognition and acknowledgement of the fact of Technocracy's existence.

At the bottom of page 32, in the same article, Mr. Heilbroner states, "For in one respect the Technocrats were right: the steady invasion of technology is the commanding reality that shapes the economic relation of man to nature in our day." In this sentence Mr. Heilbroner intuitively senses a direction of movement in the social structure of the future that is an abrogation of his previous misstatements on Technocracy.

We are writing this letter as a matter of record in order to correct the errors in substance and in fact. We would be very pleased to communicate further with you or with Mr. Heilbroner on this matter, if you feel that the subject requires further delineation or expansion.

Very truly yours,
TECHNOCRACY INCORPORATED
Howard Scott,
Director-in-Chief

●

IRELAND RAILROAD SYSTEM

General Motors has received a $5.6 million order for new diesel electric locomotives for Ireland's nationalized railroad system.

The first consignment is scheduled for October, with complete delivery expected by the end of this year.

—Industrial Marketing

ELECTRONIC SEWAGE PLANT SUPERVISORY SYSTEM CONTROLS SEWAGE PUMPING

Orange County Sanitation District, California, will operate four unattended sewage pumping plants with an all-transistorized electronic supervisory scanning system. Minneapolis-Honeywell is installing the monitoring system made by Moore Associates, Inc., San Carlos, California. Use of solid state scanning coders and decoders eliminates use of multiple leased telephone lines and multiple tones.

A coder at each of the unattended pumping plants will continuously scan on-off relay and switch contacts, representing alarm and status conditions, and transmit pulse-coded signals over one leased telephone wire pair to a central control center where information will be decoded and displayed. Status conditions to be monitored include: (1) Wet well low water level; (2) wet well normal water level; (3) wet well high water level; (4) wet well high-high water level; (5) station power off; (6) dry well wet; (7) instrument air pressure lost; (8) pump No. 1 running, and the operating conditions of 4 pumps and valves at each station.

The system is completely transistorized and features plug-in solid state printed circuit card modules. Maintenance is reduced to unit substitution of printed circuit cards in event of possible system malfunction. The system engineering for the sewage treatment plant controls was done by John A. Carollo, Consulting Engineers, Phoenix, Arizona.

—Public Works

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Social Effects Of Human Greed

The ownership of other human beings has the basis of slavery—with its attendant cruelty, overwork, and malnutrition. The semi-ownership of others through marriage, parenthood, apprenticeships, indentures, and sweatshop employment, have on many occasions brought out the greed, the sadism, and the arrogance that form a natural trinity of traits in man.

Greed has long been treated by philosophers as one of the worst vices of man. Yet, today, greed is as strongly evident as ever. Philosophical moralism has been ineffective as a device for correcting this fault in human nature. And, it is to be noted, the leaders of those nations which prate most feverishly about their trust in divine morality are among the worst offenders.

Historical evidence proves that there is a sizable proportion of the people with strong tendencies toward greediness; and if given any reasonable opportunity to exercise it, this minority can make life miserable for the rest of the human race. Much of history is made up of the acts and consequences of greediness.

The tendency toward greed pervades all races, sects, and cultures of mankind. It is sufficiently widespread that no attempt at eradicating it from human nature can be contemplated. At best, it can only be rendered impotent. The answer to the question of greed is not to be found in moral philosophy or legal restraint, but in a new approach based on science.

The most conspicuous practitioners of greed in history have been the political leaders, landlords, merchants, priests, and generals. But greediness has not been limited to these; they have just happened to have had the more favorable opportunities for developing it.

As for the objects of greed, they are as diverse as human motivations, of which there are a dozen or so of primary importance.

Perhaps the most basic motivation is that of nutrition. Everyone must eat, and he who is at all normal desires tasty and nourishing things to eat and drink. But there are many who are hoggish about their eating. This gluttony may apply only to the quantity of food consumed, stimulated by an excessive appetite and made possible by an enlarged capacity. Such persons are more-or-less annoying to their associates; but they are a real social problem only when food is scarce and when overeating by some means privation for others.

A more serious problem is that presented by certain gourmet eaters—those who have the time, the means, and the ego to demand only The Best. Such persons insist on only the very choicest of food, prepared under the fussiest of conditions, and served under the snootiest of circumstances. Wealthy gourmets have been known to travel thousands of miles just to eat certain foods, served in certain manners, in certain surroundings. It is difficult for a normal person to comprehend such greediness for food and drink, but it does exist. The only fortunate aspect of it is the limited capacity of the individual to consume. Even so, the extremist gourmets can make their nutrition a very costly matter to the society.

The desire to live is another motivation which may have greedy aspects. In times of emergency, people have been known to trample others to death in an effort to escape disaster for themselves. Some of this can be excused on the grounds that it occurred under the frenzy of panic; but this is not always the case. Many people have been deliberately killed by others simply because they happened to be witnesses to acts of felony. In extreme cases of greed for life, if one has the power (as various people have had in history), one may, directly or indirectly, condemn thousands of others to death in order to save or attempt to prolong his own life.

The desire to be important motivates much greed and has brought much misery into the world. Some of the highlights of history focus on greed for fame of certain powerful figures; for example, Cheops, King Solomon, Alexander the Great, Constantine, Tamerlane Napoleon, Hitler — to name only a few who were able to cut loose on a larger scale than most.

In American life, the symbol of greediness has become the dollar sign ($). Success for an American is usually stated in terms of what he is 'worth,' meaning the dollar value of his estate. In America, opulence, prestige, and power are based on the number of dollars one commands. Hence, it is customary for the greedy American to center his attention on 'making money.'

The Success stories of wealthy Americans are replete with apologies for continuing the pursuit of the dollar long after all possible economic needs of life have been guaranteed. The usual excuse is that 'making money' has become a fascinating 'game' that one pursues for sheer pleasure; in other words, it has become an enjoyable habit which one is reluctant to break. These Success stories carefully gloss over the poverty, sweat, tears, and blood of the many which went into providing the 'pleasure' of the few.

Greed is antipathetic to compassion; it is immune to remorse over the suffering it causes. People who have compassion for other people will never be the heroes or heroines of American Success stories. (In saying this, we are not unmindful of the synthetic compassion exhibited by wealthy 'philanthropists' who seek public acclaim and sympathy through well-publicized contributions to charitable, humanitarian, and cultural causes; nor are we unaware that, often, some 80 or 90 percent of the 'contribution' otherwise would have gone to the Internal Revenue Service as income tax.)

Greed and Ownership

On analysis, it is shown that the extrinsic basis of greed is ownership of property. If a person cannot accumulate wealth or property, it is less likely that he will be able to nourish and develop his tendencies of greed.

The ownership of land is a prime example. It seems to give a person a feeling of power and sense of authority. The concept of ownership of land by individuals came into prominence as a phase of the culture of barbarism. A minority of land owners are inspired to greediness by such ownership, in contrast to the big majority who are content with the amount of land they can occupy and use themselves. The greedy ones seek to own more and more land. Their greediness for land, associated with a keen sense of business dealing and political opportunism, has resulted in some fantastic accumulations of real estate. The latifundias of Latin America are among the worst examples of the present day. A few families own most of the ownable land of a whole country. The large baronial estates of Europe, large parts of which were maintained as private hunting preserves, are another example of what can happen. Similar examples are to be found in Africa, Asia, Australia, and North America. The sequelae of land ownership have been tragic and disheartening to the extreme. As with other people afflicted with extreme greed, landlords are not compassionate people, but tend to be cruel and arrogant, especially to their 'inferiors.'

Ownership Rights

The rights of owership have developed many forms of morbid manifestiations besides the acumulations of land into latifundias and their equivalents. Where greediness of ownership centers on the sex desire, and given the opportuntiy to develop, we find such phenomena as large harems of wives and concubines reserved by the owner for his own pleasures. Such greed has been accompanied on many occasions by the emasculation of male attendants and the infliction of chastity devices on the females. Well-devloped greed is so morbid that the greedy ones are not content with satiating their own desires, but, they cannot tolerate the sight of others enjoying similar pleasures.

The ownership of other human beings has been the basis of slavery—with its attendant cruelty, overwork, and malnutrition. The semi-ownership of others through marriage, parenthood, apprenticeships, indentures, and sweatshop employment, has on many occasions brought out the greed, the sadism, and the arrogance that form a natural trinity of traits in man.

Many greedy individuals will deliberately plot the death of others that they may reap personal gain for themselves in the form of money, material wealth, sex opportunities, or social position; for, proprietary advantages take precedence over the lives of others among those in whom the 'instinct' of greed is aroused. Many younger people have resented their parents' living so long, thereby denying them, their decendents, their 'rightful inheritance.'

Just to keep the record balanced, we should mention that not all greed produces negative effects on others. Many people with strong tendencies to greed have made serviceable contributions to social advancement. These exceptions are the ones who have been greedy for outstanding achievement. Often, such people are not satisfied with anything less than a 'world record.' When the achievement depends on the development of superior designs and techniques, it may serve a useful purpose. For example, the develpoment of machines to break world speed records may result in worthwhile breakthroughs in mechanical design. The refining of existing precision tolerances has led to whole new fields of technological advancement, ranging from high fidelity recording of sound to the building of 800,000 kw. turbines; it has led to speed and precision of electronic computations that daze human comprehension; it has led to the breeding of improved genotypes of plants and animals.

Although certain aspects of many significant achievements can be credited to greed for their realization, even here the record is not without blemish. People who are greedy for quick results do not possess the patient and integrity to work out the problems by themselves or the willingness to share the glory with coworkers. They may (usually do) steal the work of others, 'pick the brains' of those who have thought things out, then bluff, bully, and buy their way into fame as the 'father' of some achievement. Hence, it is often the promoter, rather than the designer or developer of an invention who gets the renown. In this category come various pseudoscientists, such as the taxonomist whose ambition is to be the author of 5000 new species names; for, to achieve this goal, he must steal the work of others wholesale or do work so sloppy that it creates more problems than it resolves. Here, too, would come the promoter of the 'world's largest building'—promoted merely for the sake of being the largest or most grandiose, not because it serves a needed function.

As a whole, individual greed is a social liability and a menace. The problem is what to do about it. Obviously, it must be curbed, but by what means?

Moralism and Greed

Moralistic appeal has no effect on the greedy ones; for, they are without compassion and their egos forbid them to see themselves as malefactors in any form. They can always rationalize their greed through any system of moralistic philosophy. No multi-millionaire ever laments the means used to amass his wealth. An Adolph Eickmann can never conceive himself as being anything but blessed in the eyes of his god.

Legal restraint is only slightly more effective than moralistic appeal. Whenever there is a means for a payoff, those who have the means find little difficulty in exercising their greed. Their downfall comes, not so often from the law, as, from those whom they have short-changed on the payoff. Under the Price System, no administration would stay in office for long if it did not permit payoff.

The answer to the problem of greed in a social system, therefore, is not to be found in the moral reform or legal restraint of individuals. Such devices deter only those who are half-hearted about their greed. They never bother those who are devout zealots. The answer is to be found in an entirely different form of human control — social technology.

Incentive — Fuel of Greed

Greed feeds on incentive. If incentive can be rendered impotent, the society will have gone a long way toward eliminating the life-consuming cancer of greed. Such cancers find the Price System an ideal environment in which to flourish and proliferate. A functional society, as contrasted to an enterprise society, would abolish the principles back of greed—ownership of property and incentive. Both of these are considered prime virtues in Price System America.

In the Technate, the individual would be unable to own property. Although he may use the facilities and consume the materials he requires, he cannot own them (except certain personal effects). A person cannot own other people, nor can he own the time and labor of other people. One cannot own real estate, nor transportation vehicles, nor other energy-consuming devices. Yet, because of the technological efficiency of the society, one would have the benefits of an abundance of goods and services. However, he cannot use this abundance to build up social status for himself, nor enhance his prestige, nor increase his personal power; for, everyone else will have the same consuming opportunities as he. One will not be able to hire another individual, directly, to work for him. There will be no way of bribing an official to do you a favor or overlook a felony. There will be no way of hoarding wealth, of inheriting it, or of passing it on to any heirs. There will be no facilities for selling anything. The details for all of these things are contained in the design of the Technate. Greed will simply wither from lack of opportunity for expression.

There is no guarantee in the design of the Technate that the person with strong tendencies toward greed will be happy; neither is there any scheme to make him unhappy. No doubt most of them can find some way of impressing others with their own importance. The significant thing is that the greedy-inclined person will not be able to inflict misery on others through the exercise of greedy tendencies. On the whole, the tendency toward greediness, not being stimulated by incentive, and not being able to inflate itself through ownership, will atrophy from disuse. Values other than barbarian values will gain ascendency as motivations for human behavior.

Animal behavior, including that of human beings, can be controlled by two major techniques: (1) Manipulation of the environment; and (2) conditioning of the individuals. Both of these techniques would be employed in the Techmate—as they have always been in other organized groups. The main differences in the Technate will be in the objectives of the control and the effectiveness of the techniques.

Meaning of Functional Control

When the social technologist speaks of functional control, it is important not to confuse it with authoritarian regulation. The liberal arts 'intellectual' finds it particularly difficult to comprehend the difference.

The mere suggestion of social control excites a minority of humans into a frenzy of negation, almost in the nature of a reflex action. This minority is made up of several diverse psychological types. One of these types is the greedy egoist who fears that his anarchistic depredations against others will be curtailed if there is any form of effective social control. Another type is the philosophical liberal who cannot adapt himself to anything that is decisive or predesigned; he wants to spend his life floundering loosely in a no-man's land of indecision. For that reason, the liberal fears science; it is too definitive in its knowledge and methods to suit him. Then, there is the regimented conformist who automatically rejects any acceptance of the possibility that there may be a workable pattern of social conduct other than that prescribed by the authority that has his own mind enslaved.

The Technate is a technological design for the social operation of an Area. 'Function' is the keyword in this design. An efficient, functional design must eliminate the discordant features of the Price System. One of these discordant factors is applied greed. Its control is not a matter of reforming the individual but one of reorganizing the environment so that greed cannot find the means of nourishment.

To date, only Technocracy has come up with the practical answer to human greed. That answer is a great boon to those who are traditionally the the victims of greed. But Technocracy does not threaten to expel the greedy ones from membership in the human race. Technocracy is for everyone, not just certain ones. Even those crazed with greed in the Price System may discover, in the Technate, a satisfying way to become decent human beings.

—Wilton Ivie

●

RED CHINA BUYS WHEAT ON CREDIT FROM AUSTRALIA

MELBOURNE—Australia has sold 25,000,000 bushels of wheat on credit to Communist China, Christopher Perrett, general manager of the Australian Wheat Board announced here Wednesday.

Mr. Perrett, who returned to Hong Kong, said that terms for the deal would vary slightly from those in previous arrangements with China.

The latest would be 10 percent cash, 20 percent at six months, 20 percent at nine months,and 50 percent at 12 months. Previously the six-month payment was 40 per cent, and there was no nine month payment.

Australia's Bureau of Agricultural Economics reported last April that more than one-third of the counry's wheat export in the current financial year was expected to go to Communist China.

It estimated that wheat and flour exports this year could reach 220,000,000 bushels compared with 183,500,000 bushels in 1960-61.

AUSTRALIAN EXPORTS TO ASIA UP LAST YEAR

CANBERRA—Asian countries bought Australian exports, in the financial year ended June 30, 1962, valued at more than $806,000,000, slightly more than one-thrid of Australia's total exports for the financial year.

The movement of Australian goods to Asian countries has increased sharply in recent years. Five years ago the Asian share of Australia's exports was 23 per cent of the total.

Japan was the biggest customer for Australia in Asia last year, with purchases totaling almost $420,000,000. With Japanese exports to Australia at $110,000,000, Australia had a favorable balance of trade with Japan of $310,000,000.

Over-all, Australia had a favorable balance of trade with Asia of nearly $490,000,000.

The largest deficits with Asian countries were about $51,000,000 with Indonesia and $25,000,000 with British Borneo, mainly because of purchases of petroleum products.

J.C. PENNY INSTALLS AUTOMATED SYSTEM

NEW YORK—J. C. Penny Company and National Cash Register Co. have announced an automated retail stock replenishment system which they said would give J. C. Penny automatic control over a flow of some 20,000,000 stock items a week through its 1,700 stores in 48 states.

C. S. MONITOR

SOME THINGS TO THINK ABOUT

.....Even at this point in time, when it is so obvious that machines do not make jobs, and that, in fact, machines are now making more machines to do work, some quite prominent people are busy trying to show that machines make jobs for people. On the very face of it, the assertion that machines make jobs is ridiculous, for why should industry bother to mechanize its processes if it cannot effect manhour savings? The Portland (Daily) Reporter of September 19, 1962, reported remarks by Dr. Vannevar Bush to the effect that machines make jobs. He said, 'It is of course true that automatic devices can throw men out of work locally and temporarily, if no steps are taken to shift men to other jobs and, if necessary, train for them. But, on an overall basis, automation creates jobs.' Dr. Bush then cited the worn-out example of the automotive industry as evidence that *automation* creates jobs. First, he would have quite a lot of trouble convincing former employees of the automotive industry, who have been displaced in wholesale numbers by technology, that new machines and new processes create jobs. Second, Dr. Bush confuses arrival of a new industry with the broad picture of technological change that is affecting all industries and processes. One could say technological change is of temporary effect on jobs, if the rate of economic growth were great enough to create new industries, and if purchasing power were also great enough to absorb the product of the new industries. However, the limitations of natural resources would catch up with us sooner or later anyway. It is not commonly understood that the United States is confronted with serious resource deficiences right now, and that we are now moving around some 2.7 billion tons of materials annually to obtain metals and other materials to sustain the fantastically wasteful economics of the Price System. In any case, Dr. Bush cannot point to one case where machines and automation make jobs, nor can anyone else. The only new 'industry' that has arrived on the North American social scene, since the automotive industry, has been war or preparation for war. This nice little economic gimmick is employing approximately 11 million people, including members of the Armed Forces, and has become a major base of the entire economy. We will indeed be fortunate if the worst this kind of economy does is to make saps out of us for the Price System.

.....Another economic bedtime story of the Price System is that as we mechanize things become cheaper to buy and, therefore, more people can have them, stimulating still further economic growth. The debt merchants neglect to point out that, through the device of 'easy time payments,' the buying public has been miring itself down in greater and greater debt, until now total debts against the economy, public and private, approximate $1.1 *trillion.* In this process, with the exception of junk-type gadgetry, prices have risen steadily. Automobiles, homes, clothing and food-stuffs regularly hit new record high prices. We're trapped, to put it simply. The contractual obligations of indivduals, corporations and government are becoming more and more long-term. This very process *prevents* a decline in prices. No matter how inexpensively an automobile is produced, for example, it must be sold at a price that is at least the price of cars last year. If prices of things such as automobiles dropped significantly, even one year, people who are leaching interest from the consumer on a long-term auto contract would have more trouble than they thought possible.

.....As technology intrudes upon the industrial machine, more and more people are being 'freed' to do something else. Frequently, people try their hand at selling something to somebody. Huge outlays of public money by federal government for the past thirty years have put purchasing power into the hands of the public. The same device, on a smaller scale, has been operating on local levels. More and more human effort is being diverted to socially useless activities in this pump priming process. We build boosters and missiles, now, at enormous cost. This is a non-competitive kind of industrial endeavor, in that it does not compete with civilian goods. Yet, paychecks are doled out which in turn buy things. So sales have been high a la the time payment treadmill, and more people have found something to do in chiseling their fellow man. The question is: How long can this process be kept up before something *blows* up?

12247-1

Hydroelectric Power Development In U.S.S.R.

The extent and nature of hydroelectric power development in the world today are summarized by Director-in-Chief Howard Scott of Technocracy Inc. in the following extract from a letter to Rupert N. Urquhart, Editor, Technocracy Digest, dated October 17, 1962, covering Russia, China and North America. The potential and actual power developments in these areas of the earth are of great significance and are deserving of careful attention by students of social affairs.

In the Russian power development, there are two cascades, one on the Dnieper and one on the Volga, which are practically completed. The Volga is Europe's largest river with an average discharge of 350,000 second feet, practically the same as the St. Lawrence River. Its length, 2,300 miles, is comparable to the Mississippi. The hydroelectric plants on the Volga will have an aggregate capacity of 8,930,000 kw and a total developed head of about 430 feet. At present, this cascade contains the two largest fully operating hydroelectric develpoments in the world. Volgograd, 2,543,000 kw, followed by Kuibyshev with 2,300,000 kw. Russia is planning to build the world's highest dam, 990 feet in height, on the Inguri River, followed by the Nurek dam to be constructed on the Vakhsh River, 980 feet high.

In Siberia, on the Yenisey River, 2,400 miles long and with a total head of 5,200 feet, the Russians plan four plants in this cascade, each of which would set a world record for electrical capacity. From top to bottom of the cascades, their names and potential sizes are: Sayan, 5,000,000 kw; Krasnoyarsk, 5,000,000 kw; Yenisey, 6,000,000 kw; Osinov, 5,000,000 kw. Krasnoyarsk is under construction. We have no information on the progress of the other three plants named in this Yenisey cascade. The generators in Krasnoyarsk will be of 500,000 kw capacity each, or twice as large as those now being installed at Bratsk on the Angara. The Russians also announced that their installation for Sayan will consist of six 840,000 kw turbine units. Bratsk on the Angara has been under contruction for some time. Its planned capacity is 4,500,000 kw which will require the installation of twenty 225,000 kw generators.

The estimated developmental hydroelectric capacity in the U.S.S.R. is about 200 million kw, over 85% of which is located in Siberia.

China has two projects in hydroelectric development that exceed any development in Russia. One, the Ichang Gorge on the Yangtze where, at one site in one installation, 25,000,000 kw will be developed when completed. This calls for an installation of fifty 500,000 kw turbine units. Work on this project has been underway for some time, but we have no late progress reports to transmit. The other great potential, the greatest in the world, is that of the Tsang Po, where that river has cut a gigantic canyon. By drilling a tunnel 10½ miles, it could drop the water 7,500 feet. It is estimated by Caldwell and Company of London and separately by Dr. Thring of Austria that the potential of the Tsang Po is 30,000,000 kw without dams and, with storage dams, it could produce 52,000,000 kw, the world's largest hydroelectric installation.

In the United States and Canada, there are only a few potential sites of hydroelectric development that can be considered in the large scale class: The possible development of a cascade on the big Hamilton River in Labrador of 10,000,000 kw, and the dam on the Finlay, the Parsnip and the Peace which could develop an over-all potential of several million kw. The Moran site on the Frazer would be of a similar order. The largest single installation would occur at the Rampart Canyon down river from Fairbanks on the Yukon, where 5,000,000 kw could be generated at a single site. No construction is underway except on the Peace River complex, but to connect these projects in Alaska and Canada would require the transmission system of a million volts D.C. The Russians are already erecting the steel towers for their million volt transmission line in the US.S.R. These projects in Canada and Alaska are too large to be undertaken by private enterprise and could only be initiated as government projects, so how much effect these giant foreign hydroelectric power installations will have on the Continent is decidedly a moot question.

Salute!

Howard Scott,
Director-in-Chief

WATER IS THE KEY

The nation's standard of living will be lowered in 15 years, according to a Montana State College scientist. Water is the key.

Cheap goods, cheap food and cheap services—the basis of our high standard of living—"depend firmly on prodigal waste." Dr. Charles C. Bradley writes in the magazine Science, publication of the American Association for the Advancement of Science.

"In achieving such luxuries as flush toilets, synthetic detergents, cheap paper and atomic power we find ourselves also achieving polluted streams, sudsy well water, radioactive milk and poisoned oysters," he says.

Doctor Bradley calculated that each American "uses" about 15,000 gallons of water a day, an averaging of the water used to raise crops of grains, vegetables, fruits and food animals and to serve industry, cities and homes.

For example, after studying the rate with which wheat and alfalfa plants use water to reach maturity, Doctor Bradley figured that it takes 300 gallons of water to produce 2½lbs of bread and 2300 gallons to produce one pound of beef.

At that rate of water use, Doctor Bradley believes, we can support a population of about 230 million without lowering our standard of living.

This population figure is expected to be achieved within 15 years.

By about 1975, then, the American people will be faced with the choice of either continuing the wasteful use of water that makes our goods and food cheap, or introducing efficiency by cleaning up streams, reclaiming sewage and controlling run-off and evaporation.

Both choices seem to imply a lowering of the standard of living.

Continuing the waste of water will gradually reduce the food and commodities available to the general population.

Adopting expensive means of water conservation will make both industrial goods and food much dearer and thus available to fewer people less often.

"At the present rate of rainfall and population growth we should have almost 200 years before the American standard of living drops to the subsistence level and Malthusian controls eliminate the necessity for intelligent action." Doctor Bradley says.

By "Malthusian" controls of population Doctor Bradley means such "natural" controls as disease, starvation and wars that will drastically reduce the number of people living in the United States!

—Seattle Post-Intelligencer

OIL DRILLING COMPANIES GOING OUT OF BUSINESS AT AN INCREASED RATE

Wall Street Journal, October 12, 1962, Dallas—A deepening recession in the oil well drilling industry is accelerating the attrition rate among drilling contractors.

In recent months more than 30 contractors have sold at auctions more than 100 rotary drilling rigs, while others have disposed of additional equipment in private sales, Warren L. Baker, executive vice president of the American Association of Oilwell Drilling Contractors said.

A survey earlier this year in the Oil and Gas Journal, a trade publication, showed that the number of U.S. drilling contractors had tumbled 26.2% in five years to 880, and since then "an additional substantial number of contractors have gone out of business," Mr. Baker said. Contractors are going out of business at an increased rate this year, he added.

A census by Reed Roller Bit Co., Houston, shows there were 2,768 drilling rigs in the U.S at mid-year, 252 fewer than a year ago and 520 less than three years ago. The census showed that 787 of these rigs were out of service, an increase of 152 from three years earlier.

In its report for the week ended October 8, Hughes Tool Co., Houston, said there were 1,643 rotary drilling rigs active in the U.S., up 32 from the previous week, but 205 fewer than in the like 1961 week.

Mr. Baker predicted that the number of active rigs and the number of well completions will fall further and further behind the 1961 pace in the remainder of this year. "It now appears no more than 46,000 new wells will be completed in 1962, maybe less," he said. This would be the fewest since 1952 when 45,879 were completed. It is about

500 fewer than previously forecast for this year. In 1961 46,962 wells were completed.

Through October 6, a total of 34,820 wells were completed, 352 below a year earlier, the Oil and Gas Journal said. In the previous week, completions trailed a year earlier by 328 wells.

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U. S. STEEL DROPS 1000 SUPERVISORS

More than a thousand supervisors of the U.S. Steel Corp. will be fired or forced into early retirement over the next few months as the corporation's cost-cutting efforts hit the brass.

A company spokesman said the dismissals were ordered only after "long and careful study" and with "great regret."

Third quarter earnings of the giant steelmaker fell to their lowest level in 16 years, the company announced last month.

Profits dropped to $26,825,499 or 38 cents a share, not enough to meet the dividend rate which had been cut from 75 to 50 cents.

Notices of termination have been mailed to management personnel throughout the country.

The Homestead Works was reported to be particularly hard-hit.

All major steel companies have been making strenuous efforts to reduce costs for more than two years.

The pace quickened after the industry's effort to raise prices last spring was beaten back by President Kennedy.

Until recently, the major impact has been on production workers, where the work force has dropped to 376,646, from a March peak of 449,303.

In the past four months the salaried force, usually stable despite production drops, declined by more thn 5000 persons.

U.S. Steel, as usual, declined to say how many people were being dismissed or how many are left in its supervisory force.

There were some rumors that the supervisory cuts might involve 20 to 30 percent of the supervisory force, but a spokesman said this was "too high."

—Pittsburgh Press

MY TWO CENTS WORTH

I see where we almost got into a war with Cuba, but the Russians took the missles and bombers away from the Cubans, so we don't have a good excuse for fighting them.

It seems to me the Cubans made a mistake by not getting into war with America. If they would let us fight them and they lose the war, they would be lots better off. After the war, the United States would go in there and spend billions of dollars to fix up their country. Besides that, our businessmen would invest millions and millions of dollars to build factories and things. Everybody would be put to work and they would have prosperity. It is something like we did for Germany and Japan after we licked them in the last war.

Of course, if the Cubans let us lick them and bring them prosperity, their island won't be anything like it was before. But that shouldn't bother them because they don't like the way it was anyhow and they are trying to change it themselves. Naturally, the United States will want to tell them how they should live, and what they should buy, and what they should believe and think. That's to be expected, and they shouldn't feel too bad about it. We are a free country, so what we tell them to do should make them free too. Besides, what's the use of being free if you don't have prosperity to go with it?

Here in America, we are all free. All we need is enough money to pay our rent and other bills and pay our taxes, then nobody will bother you much. If you get sick and don't happen to have enough money to pay for it, I guess that's another story. Anyway, if things get real bad, you can go on relief and let some social worker tell you how to live and what to eat and wear. It really isn't so bad living in a free country if you just don't think about it too much.

So I don't see why the Cubans should object to being free. The only bad thing about it would be the people who got killed in the war. But if they surrendered real quick it would help some. From what I read, there are too many people in Cuba anyway and we would be doing them a favor by killing some of them off, especially the poor ones who can't support themselves anyway.

—Ima Moron

TECHNOCRACY IN THE FIELD

The Members of Technocracy apply their efforts in various ways to bring to the attention of all North Americans the significance of the present social trends and the need for a technological solution to the problems which arise out of them. They realize that only through their activities and efforts is the public made aware of Technocracy's Program.

Panel at Section 1, R.D. 12247, Everett, Washington listens as Lou Ann Hussman, Section Secretary, reads report on Technocracy which appeared in Los Angeles Times.
—Techphoto by J. Berge

More Publicity For Technocracy

For an idea that has repeatedly been pronounced 'dead' by the press and other media of public communication, Technocracy seems to be getting more and more attention in books, periodicals and newspapers, rather curiously. The Los Angeles Times of November 11 and 12, 1962, used approximately 110 column inches of space to describe its findings on the background and present status of Technocracy in southern California.

The report in the Los Angeles Times was perhaps an above average effort to provide some information on Technocracy. However, the story was incomplete in telling the 'why' of Technocracy, and it was grossly inaccurate in certain respects; for example, giving credit to Harold Loeb as a contributor to the development of the Energy Certificate, when Loeb was never even a Member of Technocracy.

No doubt, Technocrats in Southern California and in many other Sections and Groups have had an interesting evening or two reviewing the articles. We expect more evidence of the renewal of interest in Technocracy, with trends moving as they are.

IMPACT OF TECHNOLOGY ABROAD

More profoundly disturbing to the Old Order, more devastating to the age-old ideas of mankind than any political concept, past or present, is the march of technology around the world. Social change, induced by technology, population pressure and the simple desire of peoples for something better than they have now, is breaking down the Gates of the Old Order. Nothing, short of total annihilation, will stop social change either in North America or abroad.

GHANA

Tema Port Extension—The Ghana Government and Sir William Halcrow & Partners are discussing the proposed extensions to Tema Harbor, scheduled to start in six months at a cost of about 6 million pounds. They will involve the expansion of the fishing harbor to accommodate fishing operations which the Soviet Union proposes to undertake in co-operation with Ghana, and to enable big trawlers to dock. The drydock will be extended so that frigates of the Ghana Navy can receive repairs and service there. Two more cocoa sheds, two berths in addition to those on Quay No. 1, transit sheds at quay 10 and 11, and roads and rails with ancillary works are also planned.

—Foreign Trade

OIL REFINERY EQUIPMENT

GERMANY—Ten new oil refineries are planned by the German petroleum industry in the next four years. Despite its progressive industry, Germany does not produce all the equipment needed in refineries and there are considerable export opportunities here for Canadian Manufacturers.

These new developments, together with planned additions to existing plants, will raise refining capacity in Germany from 46.8 million tons in 1962 to 79.5 million in 1966. All ten refineries are to be built in the area of Frankfort and Karlsruhe and will obtain their crude petroleum from the pipline just completed between Marseilles and Karlsruhe. They will be the first in Germany, which up to now has obtained its refined oil from Hamburg, the Ruhr, and foreign sources.

—Foreign Trade

BRAZIL—U.S.S.R. TRADE

Brazil and the U.S.S.R. have agreed on an increase in the trade between the two countries in 1962 to $80 million in each direction. Among products listed in the protocol signed are 600,000 tons of crude petroleum and 300,000 tons of wheat from the Soviet Union, and 40,000 tons of coffee from Brazil.

Foreign Trade

TO EXPAND OUTPUT

GENOA—The Oscar Senigaglia Steelworks has fired up Italy's newest and largest smelting furnace. By the end of 1963 the company will produce 1.6 million tons of pig iron and two million tons of steel a year.

—Journal of Commerce

COLOMBIA

Colombia—The ministry of communications has been discussing with a large United States telecommunications company the installation of a U.S. $30 million intercontinental submarine cable between Colombia and the United States. The cable will run 4,100 miles, and is expected to be in service by October 1963. Colombian contribution to the project is estimated at U.S. $3.8 million. other countries involved in the arrangements are Panama and Jamaica.

—Foreign Trade

TURKEY HAS NEW REFINERY IN MEDITERRANEAN PORT

A new oil refinery, located at Mersin, a port on the Mediterranean seacoast of Turkey, was dedicated early in October. Capable of processing 3.2 million tons of crude oil annually, the refinery is the largest and most modern in the eastern Mediterranean and Balkan region, according to Turkish information sources.

Operated by the Anatolian Refinery Co., Inc., the refinery was established by Socony Mobil Co., which owns 56% of the shares; Shell International Petroleum Co., 27%; and British Petroleum Co., 17%.

Built at a cost of $56 million, the refinery will produce 1,446 tons per day of gasoline; 2,246 tons of diesel fuel oil; and other tonnages of aviation jet fuel, kerosene and residual fuel oil.

—International Commerce

RUSSIA BUYS

For the third year in succession, a large shipment of Alberta's famous registered purebred Hereford beef cattle has just left for Russia. This fall's shipment, consisting of 370 animals bought mainly from southern Alberta's leading Hereford breeders at a cost of $130,000, was assembled in Calgary and is described as the largest single export shipment of purebred beef cattle ever to leave Canada. Most of the cattle were heifers for improving foundation stock and crossbreeding purposes to improve Russian herds in southwestern Siberia. Russian buyers, who visited 120 Alberta farms for their purchases, reported that in seeking to improve their own beef herds they had purchased cattle from Canada, some from the United States, and some from Britain. But since 1960, it was found Canadian animals best withstood the Russian climate and terrain. So they concentrated their purchases in Canada. Purchases for Russia in Alberta the last three years amount to $500,000.

—Western Business and Industry

HUGE DAM PLANNED ON DANUBE

Yugoslavia and Romania are planning to dam the mighty Danube at the famed Iron Gates.

Romanian and Yugoslav sources here think a preliminary agreement on the $300,000,000 dam will be signed before the end of this year. Bulgaria is also reported to be interested in participating.

The dam, one of Europe's largest, would provide Yugoslavia and Romania—and Bulgaria if it participates—with huge amounts of electric power and improved river navigation.

The Iron Gates, a narrow Danube River Gorge on the Yugoslav-Romanian border, have concerned engineers for thousands of years. The gorge is the greatest navigational hazard on the river.

For mile after mile in Yugoslavia the Danube flows peacefully and leisurely. Then it heads into a Carpathian Mountain gorge as it turns south to form the Yugoslav-Romanian border.

The gorge i s 65 miles long. Slowly it narrows. At the southern end it is only 360 feet wide. This last two-mile stretch is called the Iron Gates. The river's water, after flowing in a mile-and-a-half wide bed on the Yugoslav plain, are squeezed through into a furious rushing torrent of foaming white water. Once through the gorge the Danube spreads out into a wide blue river again, and the water flows calmly down to the Black Sea.

Barges manage to get through the gorge, but it is dangerous.

The Roman Emperor Trajan built a road around the gorge so goods could be carried overland between the two parts of the Danube.

In modern times engineers have dreamed of putting a dam across the narrow gorge, to harness the river's energy for electric power and create a navigable artifical lake.

Yugoslav and Romanian engineers did not get to work on this project until after World War II. Their work has been hampered by strained relations. Now these are improving.

The dam would not be on Bulgarian territory, but Bulgaria is thinking of participating because it would like to share in the electric power production.

Long Beach Press-Telegram, October 3, 1962, Cape Canaveral (AP)—A missle and satellite tracking television-telescope far more precise than the best radar has been developed experimentally by a group of Air Force scientists here .....

... It already has been used to take photographs of orbiting Soviet and U.S. satellites at altitudes of 150 miles with such precision that they can be distinguished by shape.

Indeed, it is so sensitive that it can photograph an object no larger than a bowling ball at an altitude of 100 miles.

By using the natural light present on even the darkest night this camera can take pictures in the dark better than a man with a $2 camera shooting in bright sunlight . . .

POWER EXPANSION IN YUGOSLAVIA

Yugoslavia has obtained a loan of $30 million for a term of 25 years with interest at 5¾ percent from the World Bank, for power expansion. The loan will help finance a 240,000 kilowatt hydroelectric plant on the Drina River and the installation of 362 miles of transmission lines. Power sales in that country have been increasing by 16 percent a year but industry uses 70 percent of the total and receives priority. Only half of the total population now has electricity and mainly in the cities. The present project is part of a larger five-year program to install 1.7 million kilowatts of new generating capacity by 1965-1966.

—Foreign Trade

SPAIN EXPORTS TOOLS

Exports of machine tools by Spain have increaed to a rate of $500,000 worth a month. Although it is a new export line for Spanish manufacturers, they expect sales of machine tools to other European countries to average around $6 million a year.

SOVIET PETROLEUM EXPANSION

Soviet Union's 1960 petroleum production volume of approximately 148 million tons more than quadrupled the country's 1949 figure, making the USSR the world's second largest producer of crude petroleum. The U.S. still holds first position but the gap in production volume is rapidly narrowing between the two countries.

—Industrial Marketing

POWERFUL MICROSCOPE

First commercial microscope to achieve magnifications of more than 2 million diameters which then can be optically enlarged 10 times has been purchased by Columbia University, New York, for study of the atomic structure of metals. Called the "Field Ion Emission Microscope," it was invented by Dr. Erwin W. Muller, Pennsylvania State University, and built by Central Scientific Co., Div. Cenco Instruments Corp., Chicago, in conjunction with HRB-Singer Inc., State College, Pa. The instrument consists of a vacuum pumping system, a tube holding liquid nitrogen, a fluorescent screen, a metal cone to enclose the specimen, a camera, and a 25,000-volt power supply. Microscope is capable of resolving distances smaller than one angstrom unit (4 billionths of an inch). Instrument functions by ionizing helium atoms on the surface of the specimen which are projected on the fluorescent screen and show the structure of the surface.

—Foundry

CONTINENTAL TRENDS IN TECHNOLOGY

U.S. STEEL PLANS TO CLOSE A PLANT IN MINNEAPOLIS, LACK OF BUSINESS CITED

MINNEAPOLIS—U.S. Steel Corp. said it will suspend operations at its American Bridge division plant here around October 31. It cited lack of business.

The company said the closing will be "temporary," but it added there is "little hope" for an early reopening. U.S. Steel said most plant officials would either retire or transfer to other division plants.

Employment has ranged between 200 and 300 in recent years.

A "greatly depressed market" for structural steel products and the division's "inability to obtain sufficient orders in the Minneapolis area to maintain a satisfactory rate of production" were key factors in the decision to close, the company said.

A spokesman also noted "high labor costs" at the plant. He said workers at the facility are represented by the United Steelworkers Union, while those in nearby competing plants are covered by other unions.

About half the plant's volume in recent years has been in fabricating structural steel for iron ore mines, chiefly those operated by the company's Oliver Iron Mining division in Minnesota, This business, it is understood, has dwindled to almost nothing.

—Wall Street Journal

AUTOMATION—THE HUMAN PROBLEMS

Industry has a responsibility to itself, its employees and to the economy as a whole to modernize, to make its operation as efficient as possible—in short to automate. John Billera, U.S. Industries, Inc. vice president, urges businessmen to shoulder responsibility for the people who are adversely affected by today's advanced mechanization of industrial operations. USI and the International Association of Machinists are sponsoring the foundation on Automation and Employment, which is financed by "dues" on the lease or sale of each USI automated machine. Dues vary from $25 to $1,000 per machine. The foundation uses the funds to find ways of alleviating the effects of technological changes on labor. Cornell University acts as the foundation's research arm.

—The Tool and Manufacturing Engineer

NEW SCANNERS INSPECT WHEELS ON SOO TRAINS

New devices using electronic techniques have been put in service on the Soo Line Railroad inspecting the wheels of the road's freight trains while the trains are in motion.

Last month Soo Line forces installed two Wheel Thermo -Scanner units manufactured by the General Railway Signal Company. One is located in the track near Withrow. Minn., to inspect trains moving to and from points east of Minneapolis and St. Paul, Minn. The other unit is near Rockford, Minn., where it has started scanning trains moving to and from points west of the Twin Cities.

Each scanner, in effect "takes a picture" of the infra-red (heat) radiation coming from each wheel hub as the wheel passes over the scanner. Electronic units transmit the infra-red readings to the dispatcher's office at Minneapolis, where the readings are printed out in graphic form and interpreted.

An unusually high reading, which could indicate either an overheated journal bearing or dragging brakes, alerts the dispatcher, who in turn notifies the train crew by special wayside indicators or two-way radio.

Thus notified, the crew stops the train and inspects the wheel which turned in its own alarm.

Railway Employee Journal

PAYCHECKS END FOR 26,000 EMPLOYES

Los Angeles Times—The traditional paycheck has ended for Bank of America's 26,000 employees in California. All bank personnel will no longer see or handle their remuneration, bank officials report.

Last week all employees began receiving their salaries through an automatic deposit to their checking accounts. Instead of a paycheck each staff member received a deposit statement . . .

AUTOMATIC WATCHDOG RUNS PLANT

An automatic watchdog to tell management how machines are behaving and to supervise control of plant flow processes is being marketed by L. M. Ericksson Ltd., Montreal, Canadian subsidiary of the Swedish communications company.

It consists of a centrally located machine from which issues a roll of paper bearing continuously printed lines. The frequency of the lines and their pattern are directly related to the performance of the machines they are connected to.

An electrical or electronic impulse contact is fitted to each machine to indicate on the Centralograph information concerning total production time, setting-up time, time lost, effective operating time, machine time, and machine feeding time.

On a telephone-type dial near the machines, the operator can dial a code number to tell management the reason for a particular machine being on idle time.

This combination tells management in a flash what all the machines in a production line are doing, and the reason for hold-ups.

It can also be used to measure wage and incentive plan efficiency. schedule maintenance operations, work out direct costs, and schedule production runs.

The system has been successfully applied to the textile industry, breweries, iron and steel mills, wire manufacturing, and to the chemical and petroleum industries.

Centralograph equipment is installed by Imperial Tobacco Co. at its Guelph plant, Northern Electric Co., in London, Ont., factory, Triangle Conduit & Cable (Canada) Ltd., Toronto, Molson's Brewery (Ontario) Ltd., Toronto, Johns-Mansville Co., Toronto, and other Canadian plants.

—The Financial Post, Toronto

TVA PROGRESS

Home use of TVA's 155 retail distribution systems reached 9,553 kwh and average price of 0.96 cents per kwh for the fiscal year ending June 30, 1962. The systems have 1,489,319 consumers.

The breakdown includes 1,307,590 residential consumers of which 320,399 have electric space heating. The average annual use by space heating customers runs to 21,363 kwh at an average cost of 0.79 cents per kwh.

Greatest home use is reported for the city of Muscle Shoals, Alabama at 17,190 kwh per home.

The TVA news release also reports that in 1961, the TVA area enjoyed 456 new and expanded industrial loads of 150,000 kilowatts, an investment of $314 million and 26,000 new jobs.

—The Pacific Northwest Public Power Bulletin

—Note the low cost of power in this big (too big for private enterprise) system. Why not go bigger yet if it is good for us?

RADIO CONTROLS TRAFFIC SIGN

The New Jersey Turnpike recently placed in operation a system for the illumination by radio of remotely-located warning signs along the 131-mile toll road—the first radio sign control system of its kind in the world. This system, developed by Motorola under contract with the Authority, will have as its primary use the operation of 67 neon emergency speed warning signs spaced at critical locations along the highway. These signs, formerly posted manually by state police patrols, will now be activated by the central radio dispatcher at the administration building.

Designed for maximum speed and simplicity of operation, control personnel may select and illuminate a sign or group of sign locations in less than five seconds. Transmission of data for the selection and activation is accomplished by using frequencies in the microwave and VHF portions of the Turnpike Authority's existing radio communications system. The signs now equipped with this radio control are capable of displaying road and weather messages such as: Drive slow ahead, Accident, Fog, Ice and Snow.

Some of the unique features and highlights of the radio control system are: 1) Adaptability to ride "piggy-back" over the same facilities which provide two-way mobile communications along the Turnpike; 2) prearranged programming at the control console which permits the operator to set up his message or group of messages and tranmit the entire program without repetitive manual operation; 3) automatic checking and verification circuits which provide partial return supervision to indicate that the selection and operation have been performed; 4) message memory circuits built into an 18-foot illuminated strip map of the entire Turnpike (the map identifies the roadway warning signs and the memory circuits utilize an optical projection system to display the messages which have been operated at any one or all of the sites selected); and 5) automatic print-out device at the control point providing the operator with a printed record of all operations performed through the control system, including time and date for each operation.

—Public Works

COMPUTERIZED STEELMAKING

A computer directed control system—the first to be applied to the steel making process and one that bypasses conventional controllers—will be installed at the Roemer Works of Sharon Steel Corp., Virtually every significant steel making variable, beginning with order requirements and raw materials and ending with the ingot, will be computer controlled. For example, a solid state Honeywell 290 process computer, capable of controlling two oxygen furnaces simultaneously, will determine the charge of hot metal, scrap and flux materials for each heat of steel. Using this and other stored information, the computer will calculate and control the rate of oxygen injected into the furnace, the position and angle of the oxygen lances, the amount of additive materials introduced during the blow, and rotating speed of the inclined furnaces. The Sharon installation, incidentally, is the first in the United States to use the Stora-Kaldo basic oxygen steel-making process which was developed in Europe.

—The Tool and Manufacturing Engineer

BLAST FURNACE WATER RECIRCULATED

A closed recirculation system costing approximately a half-million dollars to end discharge of blast furnace effluent into the Lehigh River was placed in service recently by the Bethlehem, Pa., plant of Bethlehem Steel Company. The new system, which will service the seven furnaces, supplements and improves a closed treatment system voluntarily constructed earlier this year on a crash basis for two of the plant's blast furnaces when it was learned that the effluent being discharged into the river occasionally contained abnormal amounts of substances harmful to fish and other aquatic life.

Main feature of the new installation is a cooling tower located over a series of three tanks in which the effluent is treated before being recycled to wash the furnace gas. The tower measures 67 feet long, 41 feet wide, and 51 feet high. Roof of the tower stands approximately 120 feet above the ground.

In addition to the tower and three treatment tanks, the installation includes a number of heavy-duty pumps enabling the system to handle approximately 16,000 gallons of effluent per minute. Normally it will operate at a rate of about 12,000 gpm.

—Blast Furnace and Steel Plant

BIGGEST BARGE HAULS CEMENT

The "Angela"—believed to be the largest ocean-going barge in the world—was recently launched for Atlantic Cement Co. at Avondale Shipyards in New Orleans. She will be used to transport cement from Ravena, N.Y., to distribution plants along the eastern seaboard. Capacity is 90,000 bbl.

—Rock Products

DEVELOPING SOCIAL PROBLEMS

57 VEHICLES COLLIDE IN FREEWAY FOG

LOS ANGELES—A stream of fast-moving traffic rushed down the Santa Ana Freeway into a bank of thick fog. There was a crash. Then another. Then another. Then dozens more.

By the time all traffic had crashed to a halt, 57 automobiles and trucks had been smashed up, 16 persons hurt, one critically, and 26 miles of freeway paralyzed.

One victim of the incident said yesterday: "I was hit six times before I could get out of the car."

N. CAROLINA HAD CLOSE CALL FROM ATOM BOMB

WASHINGTON—Dr. Ralph E. Lapp, a nuclear physicist, said today North Carolina had a close call last year from a jettisoned nuclear bomb that packed a potential wallop of 24,000,000 tons of TNT.

The Defense Department declined to affirm or deny Lapp's report.

In a book being published Monday, Lapp, who is not connected with the government's atom program, says "nuclear weapons have been involved in about a dozen major incidents or accidents, mostly plane crashes, both in the United States and overseas."

"In one of these incidents," Lapp says, "a B-52 bomber had to jettison a 24-megaton bomb over North Carolina. The bomb fell in a field without exploding.

"The Defense Department has adopted complex devices . . . to prevent the accidental arming or firing of nuclear weapons. In this case the. . . warhead was equipped with six interlocking safety mechanisms, all of which had to be triggered in sequence to explode the bomb.

"When Air Force experts . . . examined the weapon after the accident, they found that five of the six interlocks had been set off by the fall. Only a single switch prevented the . . . bomb from detonating . . ."

Lapp ostensibly was referring to an incident that happened January 24, 1961, when an $8,000,000 Air Force jet bomber crashed in a rural area about 15 miles north of Goldsboro, N.C.

Lapp's book, entitled "Kill and Overkill," also said: "The United States stockpile of nuclear bombs, including H-bombs, already amounts to at least 30,000 megatons (the equivalent of 30,000,000,000 tons of TNT explosive), enough to saturate a continent—or to overkill the Soviet Union many times."

—Associated Press

SURPLUS DAIRY PRODUCTS

WALL STREET JOURNAL—The Federal Government bought 119.8 million pounds of surplus dairy products in September to prop milk prices, up from purchases of 49.8 million pounds in September 1961. Since the beginning of the marketing year, April 1, the Agriculture Department has bought 1.1 billion pounds of dairy goods, far above the 759.4 million pounds bought a year earlier.

Law requires Uncle Sam to buy all the surplus milk it is offered by processors in the form of butter, cheese and dried skim milk. The purchases must be at prices high enough to enable the processors to pay farmers an average of $3.11 a hundred pounds of milk . . .

. . . The Government generally gives away these products because little can be sold without upsetting commercial markets. This year, because of record milk production and declining consumption, surpluses have piled up so fast that Uncle Sam has had trouble finding outlets. On September 30, the Government held about one billion pounds of uncommitted stocks, far above the 411.8 million pounds on hand a year earlier.

PAST THE LIMITS OF TOLERANCE

HOLLYWOOD—Not too long ago a man driving on the Hollywood Freeway came face to face with reality. In truth, reality overcame him. Surrounded by speeding demons, blinded by smog and beset by troubles seemingly unbearable, he stopped his car on the nation's busiest freeway, got out and walked away.

He hasn't been seen or heard from since . . .

—San Gabriel Daily Tribune

FARM DECLINE REPORTED; MERGERS CONTINUE

WASHINGTON (AP)—The nation lost an estimated 123,000 farms last year and 544,000 during the last five years largely due to consolidation.

Reporting this, the agriculture department said there are 3,688,000 farms in the continental United States compared with 3,811, 000 last year and 4,232,000 five years ago.

The decline since 1950 was reported at 1,959,000. The report showed that not a single state escaped the decline from last year.

The department said the farms that have been lost were consolidated for the most part, into larger units. However, some were diverted to non-farm uses such as suburban expansion, commerical forestry and highway construction.

The land in farms this year was estimated at 1,165,355,000 acres, down about 4,000,000 acres from last year and 41,000,000 from the recent peak of 1954.

Texas leads in the number of farms with 232,000, down 8,000 from last year. Next is North Carolina with 205,000 compared with 212,000 last year. Iowa is third with 181,000 down 3,000 from last year.

Mississippi had the most losses last year—10,000.

EDUCATORS VOICE STOCKPILING FEAR

NEW YORK (AP)—A newspaper advertisement signed by 175 educators of 13 universities has suggested the United States may be building such a huge armament stockpile that it will make disarmament negotiations impossible.

The advertisement in the New York Times, in the form of an open letter to Pres. Kennedy asked:

"Believing that we aim at overwhelming nuclear superiority, has the U.S.S.R. any choice but to maintain secrecy and view our disarmament proposals with extreme suspicion?"

The letter expressed fear of what it called a possible "radical shift" in U.S. defense policy—aimed at building far more armament than is required for deterrence.

It asked whether the policy would not "perpetuate an unlimited arms race (and) block all progress toward disarmament."

The letter urged Kennedy to "reduce the scale of our arms program to fit a purely deterrent strategy" and renounce "strategic use of nuclear weapons except in response to a nuclear attack."

Kennedy also was urged to "revise our disarmament proposals to allow, by a disproportionate weapons reduction, a closer approach to equality before the U.S.S.R would have to abandon its secrecy."

Said the letter:

"It is easy to consider the Russians entirely responsible" for the disarmament impasse "but the recently revealed profound imbalance of nuclear power in our favor suggests that the problem is more complex. . . .. .

"To protect its limited force the U.S.S.R maintains geographical secrecy, strenuously resisting our efforts at reconnaissance. The United States cannot maintain secrecy over its territory. Instead, relying on our greater industrial capacity, we have developed an enormous nuclear force. . . .

"Disarmament negotiations may become fruitful if a better balance in armament can eliminate the Soviet need for secrecy."

Signers of the letter included teachers from almost every deparment at Boston university, Brandeis, Tufts and Harvard universities and the Massachusetts Institute of Technology

Also among the signers were small groups of individuals from Wellesley college, Northeastern university, Simmons college, Brown university, the University of Massachusetts, Worcester Polytechnical Institute and Worcester foundation.

AVERAGE FARM ACRE YIELD CONTINUES UPWARD

WALL STREET JOURNAL—Average yield per acre for all crops this year heads for a record 110% of the 1957-59 average, one point above last year. Wheat, flaxseed, rice, tobacco, sugar beets, oats, rye and barley all show gains. Research brings ever more production plants. Hybrid wheat, which may soon become a commercial reality, may boost yields substantially; hybrid corn and grain sorghums have raised yields as much as 25%.

Government economists say the increase in rate of output per farm worker seems to be accelerating, thanks to better methods and machinery; the average annual increase in the 1950s was 6.5% By 1980, officials predict the U.S. will need even less cropland than now to feed a far larger population.

(It is interesting to note, that what Technocracy has predicted in years past is appearing in ever increasing quantity in the 'Price System press . . . Read on.)

METRIC SYSTEM

The perennial attempt to establish the metric system in the U.S. got the usual treatment from Congress recently; It was "passed over without prejudice." That's a polite way of putting it back on the shelf for another year.

Western Construction, May 1962

WATER STUDY NEW INDUSTRY

NEW YORK—Will next year be the one when you will open the faucet to take a bath and no water comes out? How close did the northeastern United States come to rationing fresh water this year during what was called the "worst drought of the century?"

Which area of the country will be next? What can be done to prevent repetition of the disaster that hit farmers and consumers thoughout the area?

These are some of the questions facing federal, state and local officials regarding one of the country's most precious basic commodities—water.

Current consumption of fresh water in the U.S. is approximately 325 billion gallons per day against the 500 billion gallons readily available, according to the U.S. Geological Survey. By 1980, consumption is expected to almost double to 600 billion gallons per day.

Programs to solve this pressing problem are being accelerated. During the first half of 1962, the Office of Saline Water, U.S. Department of Interior, awarded research and development contracts.

NATION'S YOUTH FOUND IN GIANT CRIME WAVE

WASHINGTON (AP)—A "massive avalanche of crime —triggered by young criminals—is rolling over the nation, says FBI director J. Edgar Hoover.

"This problem boils down to the simple fact that in our land today the average man, woman and child is in greater danger than ever before of becoming a victim of this criminal onslaught," Hoover said in an editorial in the FBI law enforcement bulletin.

He noted that the recnt uniform crime reports showed a 4 percent increase last year in arrests of persons under 18.

Of 37 law enforcement offiicers killed by criminals last year, Hoover said, 12 were slain by assailants 21 or younger.

Referring to reports of almost 2,000,000 serious crimes committed in 1961, the FBI chief said:

"The massive avalanche of crime sweeping our nation is a shocking disgrace and a broad indictment of the American people."

He said there is no single answer to the problem, adding there will be "no abatement in widespread lawlessness as long as there is wholesale disrespect for law and order in our nation."

Community authorities and civic leaders "should lead the fight to halt the lawless hordes who prey on society."

"No amount of rationalization can justly place this responsibility on the shoulders of law enforcement alone."

New Textbook Simplifies Chemistry

Teaching of science, with its increasingly complex and complicated developments, has changed rapidly over the past 25 years. Many of us remember the dry, dull musty factual textbooks from which we learned science more than 20 years ago. Looking at the exciting, imaginative and stimulating textbooks being produced today we fervently wish we had been exposed to science through today's texts being written for high school and college students.

One of the most recent is "Fundamental Chemistry" just published by Professors Donald H. Andrews and Richard J. Kokes of the Johns Hopkins University (John Wiley and Sons, Inc. 1962). Even the most scientifically untutored and unknowledgeable of us cannot fail to find excitement in the way the authors present complex facts of modern chemistry.

Introduction to the understanding of the atom is an example of the imagination employed by the authors. The student is first told that he will have to deal with numbers of millions, billions and trillions and that the scientist cannot write out these large numbers. Instead, he selects a standard number and affixes an exponent which indicates the extent of the number. For example; the number octillion would be written, 1,000,000,000,000,000,000,000,000,000 (27 zeros). So the scientists indicate this number as 1 raised to the exponent 27; and write 10-27—ten with twenty-seven zeros.

Continuing, the authors urge the student to "get a feel for numbers." Then, they state that there are octillion (10-27) atoms in the average human body. Understandable. But, how can the student "feel" or visualize, or comprehend such an astronomical number? To aid the student the authors present a most imaginative illustration about the number octillion — 1,000,000,000,000,000,000,000,000,000— or 10-27.

The student is asked to consider one pea as equalling one atom. If you count out a hundred (10-2) peas, you will find they occupy the volume of a cubic inch. A million (10-6) peas are just about enough to fill an ordinary household refrigerator, and a billion (10-9) peas will fill an average house from cellar to attic; thus a trillion peas (10-12) will fill a thousand houses in a medium size town; and a quadrillion (10-15) peas will fill all the houses in one of our larger cities like Philadelphia or Baltimore.

The student is then asked to imagine there is a blizzard over Pennsylvania and that instead of snowing snow it is snowing peas. The blizzard increases and forms a blanket of peas four feet deep all the way from New Jersey out to Ohio and from Maryland up to northern New York. This blanket is about a quintillion (10-18) peas. The blizzard falls and covers the world continents with four feet deep peas. This global blanket contains sextillion (10-21) peas. Finally, go out to the farthest reaches of the Milky Way into space and find two hundred and fifty thousand planets, each the size of our earth; blanket them with peas four feet deep and you have octillion (10-27) peas—the number corresponding to the number of atoms in your body. "So," says the textbook, "you see what an extraordinarily small object an atom is and how complicated you are."

With this conception of the size and number of atoms the authors then use other mentally enticing illustrations to explain such facts as energy of atoms, chemical equations and stoichiometry, elements of thermodynamics, complex equilibria in solution and a host of other complex data concerning modern chemistry.

Once the authors have caught the fancy of their young students, they proceed to ask dozens of challenging questions, carefully devised to make the student think for himself.

On thumbing through the book, we who studied chemistry 25 years ago are hit square between the eyes with the labyrinth of facts and the maze of equations. But, on reading the text we too are caught with facinating illustrations leading into modern chemistry—and almost wish we too could go back and learn all over again. Wouldn't it have been wonderful if we could have learned from such a stimulatingly prepared text?

—Everett Herald

FOUR CRIMES A MINUTE

A RECENT FBI report reveals the shocking fact that during 1961 four major crimes a minute were committed in the United States, and that the growth of the crime rate exceeded the population growth by a ratio of nearly five to one.

'In 1961 there were an estimated 1,926,090 serious crimes of murder, forcible rape, robbery, aggravated assault, burglary, larceny and auto theft. This was a 3% increase over the previous record set in 1960.' Forty-three percent of all arrests for crimes in the categories given above were committed by persons under 18.

The report states that 'there were 71 law enforcement officers killed last year and 13,190 assaults against police officers were recorded—an average of eight for every 100 officers.'

Increase in the number of crimes committed by persons of all ages is due to a sorry conglomerate of causes, about 95 percent of which stem from the Price System. We live under a predatory social system which induces individuals to become aggressive. Technocracy defines a criminal as 'a human being with predatory instincts but without sufficient capital to start a corporation.' Profit is the main concern of business; benefits to the people, if any, are a sort of by-product. The accent is on chiseling. Built-in obsolescence in manufactured products, from automobiles down to flashlight batteries, is recognized but, instead of being condemned, is generally considered honorable or smart.

'The United States . . . pays a billion dollars a year just to store food it raises and cannot eat.' This misleading statement appeared in one of our leading newspapers. Actually there are millions of people in the United States who need this 'surplus' food, but under the rules of the Price System it must be kept off the market to maintain scarcity. It is not surprising that hungry people steal food, or money with which to buy it, for themselves or for their families.

In large cities, overcrowded housing allowed to become squalid produces conditions which breed crime. Owners of these houses, concerned only with collection of rent, take no interest in making repairs or improving the property. Consequently people who cannot afford to live in better dwellings must endure lack of privacy, filth, noise, dampness and chilliness in winter, and unbearable heat in summer. (Some tenements are invaded by rats which bite babies and young children!) All these conditions cause despondency, restlessness, desperation. Under the Price System the only way out, with few exceptions, is the road which leads to some form of crime.

Since, according to the FBI report, 43 percent of the major crimes in 1961 were committed by juveniles, and since it is reasonable to conjecture that most adult criminals tended toward this end during their youth, let us give more attention to the problems of youth under the Price System than we have heretofore given to the causes of crime among adults.

It is obvious that the youth world is a reflection of what takes place in the adult world. Whenever a major crime has been committed, our youths see banner headlines about it in newspapers. Many magazines written for youngsters give priority to crime stories, and movies and TV show exactly how some murders are committed.

Young people in America tend to be poorly nourished because they choose foods that are popular and quick and easy to obtain—a lunch, for instance, consisting of a hamburger and a soft drink. This is like buying the cheapest, lowest grade gasoline for a car with a high compression engine and expecting it to perform as well as it would on high-grade fuel. Especially during adolescence, there is great need for large amounts of the most wholesome, nourishing foods. Malnutrition, carried to extremes, can cause neurosis and inability to get along well with other people.

Unemployment is tied in very closely with the problems of our youths under the Price System. 'By the end of this decade, 3,000,000 youngsters will be starting their quest for jobs each year, as against 2,000,000 now'. (New York Times, April 6, 1961) Indications are that in the decade ahead 30 percent of our adolescents will drop out before completing high school and that about 25 percent of the college students will leave after their freshman year.

Aware of the fact that they are not likely to find jobs when they leave school, large numbers of youths lack goals in life and become frustrated. Many of them use 'goof balls,' cough medicine or powdered model-airplane glue for 'kicks'. Sniffing this powdered glue from a paper bag has been described as 'a practice growing in alarming proportions among juveniles seeking intoxicating effects.' (Los Angeles Times, Sept. 12, 1962).

Technocracy states that the various problems which arise as a result of the Price System cannot be treated separately. The solution of the problems of juvenile delinquency and of crime in general, along with all other social and economic problems, must be accomplished by the application of science to the means by which we live, throughout all of North America, in accordance with Technocracy's blueprint.

In a Technate all buildings, including family dwellings, will be kept at a comfortable temperature throughout the year; will be dust-proof and sound-proof, and will be lighted by the most effective means. Food will be of the best quality, supplied in abundant quantities to every citizen of North America. Those who wish to do their own cooking will have facilities for doing so; but both hot and cold foods, ready to eat, will always be available. The worries and frustration which parents experience under the Price System will no longer exist, and they will have more time to be with their children and to enjoy them. There will be courses in parent education and family relations for those who desire this information. Every normally bright student will be given a thorough education with 'built-in' vocational guidance. Each citizen will be given a physical examination every six months, and no one who needs dental or medical care will be deprived of it. There will be plenty of well supervised playgrounds. There will be opportunities for travel, both on this Continent and abroad, and there will be facilities for all kinds of wholesome recreation.

The greatest crime of all is occurring—not four times a minute—but *every second.* It is apathy, and even hostility, toward Technocracy's plan for the New America. We who are Members of Technocracy must double and redouble our efforts to interest non-members in Technocracy *before it is too late!*

Edith V. Chamberlain, 11833-2

5000 SALARIED JOBS VANISH

Salaried workers in the steel industry, long immune to the vagaries of production, are feeling the industry's profit pinch with new discomfort.

The monthly working forces report of the American Iron and Steel Institute showed an unusual drop of 2143 salaried workers between August and September, and an overall drop of more than 5000 since May.

The basic industry's salaried force has fluctated between 118,000 and 120,000 for the past two years. In September, the last month for which figures are available, it was down to 115,115.

And it declined in the face of a small increase in production jobs—the first increase in hourly-paid workers since the basic steel contracts were signed last April.

U.S. Steel's decision to fire more than 1000 supervisory employes only emphasizes that even the boss is not immune to the industry's profit ailment.

Salaried employment climbed steadily year after year from 1937, when the industry averaged 59,300 white collar workers, through 1960, when it had 124,900.

Production employment, however, has moved erratically from 512,900 in 1937 to a peak of 571,600 in 1953 down to 461,800 in 1960; and 376,646 last September.

Since 1960, salaried employment also has dwindled under the pressure of increasing costs without a price increase.

The sharp decline in the past four months is not the final cut, either.

Sources in the industry indicate more cuts are coming among white collar workers in a continuing campaign of early retirement and outright dismissal

One forman, terminated last week, appealed in desperation to The Press for information of some Government agency which could "arbitrate" his dismissal in view of his non-union status.

There isn't any.

Despite the dramatic impact on white collar workers, the steel profit squeeze continues to press hardest on production workers.

Employment of hourly-paid workers declined steadily from March, when it stood at 449,303, through August, when it hit 376,274.

White collar employment dropped a little over four percent in the four-month period. Production employment dropped 16 percent.

—Pittsburgh Press

A HARNESS ON THE SUN

Several nations in Europe and Asia are devoting appreciable money and attention to harnessing the "free" energy of the sun in the everyday service of mankind.

At least that is the impression brought back from a world trip by Dr. George O. G. Lof of Denver, well-known experimenter and authority in the subject of solar heating, with his own house in Denver partly heated by a solar installation.

Dr. Lof said leadership in ingenious ways to harness the sun directly appears most evident in Israel, France, and Japan.

He found the solar scientists of those nations putting emphasis both on solar furnaces, to provide very high heat for research and industrial work, and on more modest attempts to induce the gentle heat of the sun to perform more homely daily tasks.

In Japan, he said, there is a large sale of relatively low-cost plastic water heaters, priced at from $9 to $13 each, according to size. He estimated that 250,000 are in use. The first expense is the last. The sun works for the possessor "free."

These are simply large bags of heavy polyethylene, the bottom black, the sides and top transparent. They are fastened to the flat roof of a house. In the morning they are filled with water—they hold from 40 to 75 gallons each—and by evening on a sunlit day will have brought the water to the temperature comfortable for the traditional hot bath which the Japanese enjoy.

More elaborate metal water heaters, similar to some already in use in the United States, are also popular with those who can afford them.

Dr. Lof also found experimental house-heating systems in use in Japan, much resembling his own installation in Denver. The sun also is used to grow algae intensively—the tiny one-celled plants which are being explored increasingly as a food source.

He visited one installation which produces about a ton of dried algea a month, from a group of circular concrete ponds covering about an acre. The ponds are about 30 inches deep. The water is drawn off continuously and strained of it algae, then restored to the pond.

Dr. Lof said this installation is commercially successful and will be expanded about 10 times. Production slows down in winter, and the efficiency of the whole thing probably could be increased greatly, if covered with glass as is done with a greenhouse.

Dr. Lof found a staff of Israeli scientists and technicians working with projects which he described as outstanding in the world, in the field of solar-energy development.

The greatest eflort is going into developing electric power from the hot sun typical of Israel. One installation collects and concentrates solar heat from a parabolic mirror covering more than 3,000 square feet.

The plan is to concentrate this heat on a boiler containing a high-boiling liquid, which by heat exchange generates steam to drive a turbine, or for other uses. Dr. Lof said the efficiency will be high and altogether this unit, when completed, should be the largest and most efficient solar power plant in the world.

Israel also is working with an "inverted gradient power pond." Water saturated with magnesium choride is kept in a pond covering about 6,000 square feet and about 30 inches deep, and with a bottom covered with salt.

Such a pond loses very little heat, and after exposure to the sun for some months, the water at its bottom gets nearly up to the boiling point, and stays there.

Then it will be possible to run fresh water through pipes laid near the bottom and bring it out very hot. Such a system is possible only where there is a large source of cheap magnesium chloride nearby, such as the Dead Sea.

The Israeli also are working on a low-pressure small turbine which might be run either on vapor from an electrically heated tank, or later by sun power..

Thousands of solar water heaters are in use in Israel. The Israeli, like the Japanese, are interested in house-heating and air-conditioning units which utilize the free energy of the sun.

They are doing much work in studying "selective surfaces," which absorb short-wave solar energy at a very high rate, but give off the longer-wave resulting heat at a relatively slow rate.

This would make such surfaces better solar collectors, and more efficient sources of heat. And the Iraeli are looking also for storage materials which will hold heat for a long time.

Dr. Lof says the French are far advanced in large solar-furnace installations. In these, by means of focusing mirrors, the heat of the sun is centered in one spot to create very high temperatures.

The French, in some of the most massive and expensive projects developed so far, are using such installations both for study of ways of harnessing solar heat itself more efficiently and for learning more about refractory metals and ceramics; and even more practically, in actual processing and production of zirconium and some other rare metals.

Dr. Lof found most interesting a French installation very simple in theory. This is the combination under one roof of a solar still for freshening sea water and of a greenhouse in which the fresh water is directly put to work in growing plants.

—Christian Science Monitor

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TINY BACTERIA MAY BE USED TO MAKE ELECTRICAL ENERGY

WASHINGTON—Bacteria are among the smallest living things and probably the least appreciated, but eventually they will serve man in startling ways.

The United States Navy is supporting a project at Santa Fe Springs, Calif., where scientists are experimenting with 'biological batteries' that use bacteria to make electrical energy. Bacteria may someday power submarines more cheaply than nuclear engines. They might also convert a city's garbage into electric power.

Bacteria have long performed such chores as turning dead plants into top soil, helping cows convert grass into milk, and producing cheese and pickles for man, the National Geographic Society says. Today they are being given a host of new jobs. Farmers spray bacteria spores on fields to kill insect pests. Nitrogen-fixing bacteria are added to some plant seed to improve fertility.

PILLS SWALLOWED—Some doctors give patients pellets of harmless bacteria to combat disease-causing bacteria in the digestive system. Dentists are studying the possibility of administering vitamins to help harmless bacteria grow at the expense of those believed responsible for tooth decay.

Interest in bacteria and other microorganisms is now so high that the American Type Culture Collection, the national repository for 'germs' in Washington, D. C., is planning to build new facilities to house its expanding activities.

The Collection serves as a bureau of standards and distribution center for microorganisms. It distributes over 12,000 cultures of bacteria and other microorganisms each year for scientific and industrial uses.

The tiny bacteria must be magnified about 1,000 times to be seen clearly. They look like tiny balls, rods and corkscrews. The spheres, called cocci, may form necklaces (streptococci) or grapelike bunches (staphylococci); the hyphenlike rods are called bacilli; the corkscrews, spirilla.

Most bacteria do no harm, but some cause diseases ranging from pneumonia to bubonic plague. About 2,000 species are known. They live almost everywhere, often in fantastic quantities. A teaspoon of earth may contain billions.

BACTERIA ARE PLANTS—Bacteria are generally considered to be plants, and thus are distinguished from animal microorganisms such as protozoa and the viruses, substances so simple that scientists disagree as to whether they are living at all.

Bacteria live by absorbing food through the wall of their single cell. Some never move; others swim by sculling with slender, hairlike projections called flagella. They reproduce by simply pinching themselves in two. Some bacteria can reproduce every 15 minutes in this fashion. If their reproduction were not checked by adverse conditions, the descendants of a single bacterium would exceed the total bulk of the earth in several days.

By passing through many generations quickly, bacteria adapt rapidly to new circumstances. In a short time, they may develop resistance to antibiotics that once killed them. Today there are bacteria that actually need streptomycin to live. Others thrive on cyanide. Some made their home in an atomic reactor. There they endured 2,000 times the radiation that would kill a man and became so numerous they gummed up the apparatus.

—The Herald, Everett, Wash.

Water Pollution -- A Deadly Threat

"Water, water everywhere, And all the boards did shrink; Water, water everywhere Nor any drop to drink."—S. T. Coleridge.

Such was the curse of the ancient mariner. Posted over every bridge and dam, on every river and stream, it one day could serve as an epitaph for a civilization.

Unless we stop poisoning our waters with chemical bug killers and quick-sudsing detergents, with radio active wastes and virus-bearing slaughterhouse remains, with untreated municipal and industrial sewage, with oil-well brine and pulp mill acids and tons of silt from road and building projects; unless we reduce these and other hazardous contaminants, the curse could fall on our land in our lifetime.

And the boards that will shrink may well be the props holding up the entire free world.

Here indeed is a case where more truth than poetry is involved.

For want of a glass of clear water, the continent that heard Niagara's restless roar and sang of the mighty Mississippi and the wide Missouri and drew its life blood from the Great Lakes, that incredible reservoir holding more than one third of the world's fresh-water supply, that continent, that civilization could die of thirst in the midst of plenty.

And the nation that Khrushchev once threatened to bury well might bury itself—ingloriously, ironically, insanely—in its own garbage.

The evidence already is there: appalling, irrefutable, increasing every day.

President Kennedy has called the situation "a national disgrace."

"Pollution of our country's rivers and streams," he told Congress in his message on natural resources, "has reached alarming proportions."

A housewife in Babylon Long Island, draws a glass of water with a two-inch head of froth. It looks more like a glass of beer, but it has an oily, fishy taste.

Towns along the Animas River in Colorado and New Mexico, where a uranium mill dumps its wastes, learn their drinking water contains 40 to 160 per cent more than maximum safety levels of radioactivity.

Epidemologists trace an outbreak of hepatitis along the Eastern Seaboard to oysters raked from the Gulf of Mexico and to clams dug in New Jersey's Raritan Bay and along the Connecticut coast.

Rensselaer, N. Y., orders it residents to boil all drinking water as the bacteria count soars in its water mains from pollution in the Hudson River.

Faced with drought conditions in the Neosho River, Chanute, Kan., attempts to recycle water from its sewage-treatment plant directly into its purification plant. The water meets acceptable health standards, but foam rises to the top of every glass, piles up in 15-foot high billows at the water works and blows across town like snow.

Freighters passing through Chicago's ship and sanitary canal churn up so much suds that sprays are employed to break up the billows. On Mondays, when Chicago housewives discharge tons of detergents with the water from the weekly wash, the frothing is noticeably worse.

Gas bubbles rise from the sludge at the bottom of the Missorui River below Sioux City, where a packinghouse unloads tons of animal entrails Farther downstream, Omaha awaits the river's arrival for drinking water.

Along a 40-mile stretch of Wisconsin's Fox River, where 34 paper and pulp mills hug the banks the water flows with the color and consistency of lentil soup. And the great salmon runs are diminished in Puget Sound, another pulp-mill area.

A chemical plant near Austin, Tex., discharges its wastes in the Colorado River. For 140 miles downstream, all fish die.

Paterson, Nutley and Passiac, N. J. switch to emergency water reserves when the Passaic River floats up a cargo of dead fish. The verdict is poison by pollution.

A similar verdict is returned for thousands of dead fish found floating in tributaries of the Tennessee River, where valley farmers used DDT to rid their cotton of boll weevils.

Youngstown, Ohio, steel mills using the Mohoning River for cooling processes raise the temperature of the river so high in summer that not only is all fish life eliminated but the water is made unfit for anything—even for cooling purposes.

Typhoid fever breaks out in Keene, N.H. Hepatitis cases set a new record. Leptospirosis, better known as "sewer workers' fever," suddenly crops up in the Missouri River Valley. Health departments in a number of cities note an upsurge in diarrhea, intestinal disorders and stomach sicknesses. In each case, water is the virus carrier.

These are not Orwellian nightmares of some distant day.

All of these incidents of pollution actually happened in recent years. Some already have been corrected. Some are up for action in federal enforcement cases. Some continue unabated.

The point is that pollution problems like these can and do happen to America's rivers and streams every day. New and worse ones are in store in the future as our population booms and industry flourishes.

Clean Water Vital

Clean water is absolutely essential to America's continued existence as a nation and a civilization. We drink it, bathe in it, wash with it, cook with it, fish and swim in it. It irrigates our crops, powers our plants, refines our products, produces our electricity.

Despite a favorable annual rainfall, our available water has not increased appreciably since Columbus landed. Its use and abuse have—drastically. For more than a half -century, we have been using our great rivers—the Mississippi, the Missouri, the Ohio, the Colorado, the Columbia, the Hudson—as little more than open sewers. In that time, our population has doubled and the pollution load in our waters tripled.

The greatest gains in population and industry are yet to come. We now use about half the water we can trap. By 1980, when according to the Senate Select Committee's figures our population will jump to 244,000,000, we will be using it all. By the year 2,000, with a population of 329,000,000 demand will triple. Water reuse will be a necessary way of life.

Today about 40 per cent of our population drinks reused water: Water that has been through the sewers of some other city before purification. For instance, Pittsburgh's sewage plants empty into the Ohio River, Cincinnati takes the water out for drinking purposes and in turn dumps its sewage back in the river, Louisville repeats the process and so on down the river. Some Ohio River towns use water that has been flushed down the sewers of ten other communities.

Water is our only major re-usable resource. It can't be duplicated. It has no substitute, no synthetic equivalent. But it can be used over and over again. The problem of keeping our rivers clean enough for this sort of constant re-use has been complicated vastly by the wonders of modern living.

—The Seattle Times

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STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF THE NORTHWEST TECHNOCRAT published Quarterly at Seattle, Wash. for January, 1963.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher Sec. 3, R.D. 12247, Technocracy Inc. 6561 Phinney Ave. No., Seattle 3, Wash. Editorial Board: Harry Briggs, Editor, Ruth Berge, Lucy Barnes, Fred Botts, all of Seattle, Wash. Business Manager Rina Corcoran, Seattle, Wash.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

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5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required by the act of June 11, 1960 to be included in all statements regardless of frequency of issue.) 2500 quarterly.

Rina Corcoran, Bus. Mgr.

Sworn to and subscribed before me this 5th day of October, 1962.

E. J. Schieber

(My commission expires 3 April, 1963)

TECHNOCRACY

North America's Only Social Dynamic

WHAT?

Technocracy is the only North American social movement with a North American program which has become widespread on this Continent. It has no affiliation with any other organization, group or association either in North America or elsewhere. The basic unit of Technocracy is the chartered Section consisting of a minimum of 50 members and running up to several hundred. It is not a commercial organization or a political party; it has no financial subsidy or endowments and has no debts. Technocracy is supported entirely by the dues and donations of its own members. The widespread membership activities of Technocracy are performed voluntarily; no royalties, commissions or bonuses are paid, and only a small full-time staff receives subsistence allowances. The annual dues are $9.00 which are paid by the member to his local Section. Members wear the chromium and vermilion insignia of Technocracy — the Monad, an ancient generic symbol signifying balance.

WHEN?

Technocracy originated in the winter of 1918-19 when Howard Scott formed a group of scientists, engineers and economists that became known in 1920 as the Technical Alliance—a research organization. In 1933 it was incorporated under the laws of the State of New York as a non-profit, non-political, non-sectarian membership organization. In 1934 Howard Scott, Director-in-Chief, made his first Continental lecture tour which laid the foundation of the present Continent-wide membership organization. Since 1934 Technocracy has grown steadily without any spectacular spurts, revivals, collapses, or rebirths. This is in spite of the fact that the press has generally 'held the lid' on Technocracy, until early in 1942 when it made the tremendous 'discovery' that Technocracy had been reborn suddenly full-fledged with all its members, headquarters, etc., in full swing!

WHERE?

There are units and members of Technocracy in almost every state in the U. S. and all provinces in Canada, and in addition there are members in Panama, Puerto Rico and in numerous other places with the Armed Forces. Members of Technocracy are glad to travel many miles to discuss Technocracy's Program with any interested people and Continental Headquarters will be pleased to inform anyone of the nearest Technocracy unit.

WHO?

Technocracy was built in North America by North Americans. It is composed of North American citizens of all walks of life. Technocracy's membership is a composite of all the occupations, economic levels, races and religions which make up this Continent. Membership is open only to North American citizens. Aliens and politicians are not eligible. (By politicians is meant those holding elective office or active office in any political party.) Doctor, lawyer, storekeeper, farmer, mechanic, teacher, preacher or housewife — so long as you are a patriotic North American — you are welcome in Technocracy.

NOTICE

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All past economies have been low-energy scarcity economies. The future economy of the North American Continent, barring chaos, will be an economy of abundance. The chronicles of the past offer no pattern for the develpoment and administration of that kind of economy. The values, the expediencies, and the theories of scarcity will be of no use. Hence, the planning for the future must be without reference to anything that has gone before—it must be a brand new design. In the field of economics, the old philosophies of value must be supplanted by technological concepts of function and efficiency. Technocracy supplies these concepts.